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TREATMENT OF CARBUNCLES WITH LOCAL PENICILLIN INJECTIONS

W. Andrew Dale, M.D., Birmingham, Ala.
and
Chester A. Haug, M.D., Rochester, N. Y.

A carbuncle is a necrotizing infection of the skin and subcutaneous tissue that is usually due to the Staphylococcus aureus hemolyticus. If untreated, this lesion results in prolonged morbidity, a few metastatic infections, a long healing period, and an appreciable mortality.

Many methods of treatment have been used in the past, including local hyperemia produced by external heat or local injections, local ointment therapy, parenteral vaccines, x-ray therapy, incision and drainage, or complete excision. Chemotherapeutic and antibiotic agents have been added to these methods as they were developed. The most recent methods of treatment, however, have centered about control of the local infection by some type of incision or excision of the inflammatory mass. Although this surgical treatment usually controlled the infection, especially since antibiotics have been available, the wide incisions or excisions necessary led to large granulating wounds. Many of these necessitated prolonged hospitalization and loss of time. Final closure often resulted in a large scar or required skin grafting.

After antibiotics, notably penicillin, became available, treatment of carbuncles by this drug without surgical drainage was attempted. This undoubtedly cured some carbuncles, especially the small ones, but penicillin therapy did not relieve the necessity for drainage procedures. Since penicillin in the concentration achieved by parenteral injection did not usually control the infection, attempts to produce higher local concentrations by local injections were begun.

Peck [1] in 1944 reported on four carbuncles treated with small local injections of penicillin with moderate success. Rose and Hurwitz [2] in 1946 had excellent results in six carbuncles injected locally with drug concentrations as high as 45,000 units per cubic centimeter. They emphasized injection about the outer area of the carbuncle but also injected some of the antibiotic into the lesion. Kenney [3] in 1947 reported on four carbuncles treated first with a small cruciate incision and then by local injection of 500 units of penicillin per cubic centimeter with good results. Kaplan and Rabin [4] in 1948 had treated 24 carbuncles, using local injections of penicillin in a concentration of 33,000 units per cubic centimeter. The average healing time was 10 days. Two patients given small (30,000 units) doses of penicillin intramuscularly did not respond. In 1949 Bate [5] reported on 20 patients treated without any incisions; there were no complications and all the carbuncles healed well. Sanders and Lockwood [6] discussed the problem and noted their use of local injection of penicillin in six carbuncles.

Thus the reported experience with local penicillin therapy was favorable and this method seemed to warrant further trial. A carbuncle seems analagous to a grass fire that, burning from a central origin, leaves a central zone of smoking debris while spreading peripherally in all directions. The active part is the periphery. The central area of the carbuncle is composed of partly necrotic and partly viable tissue, but the active zone of spreading infection is the periphery. If this infection can be controlled, the defensive and reparative mechanisms of the body should then be able to slough or absorb necrotic cells and debris and to bridge gaps with fibrosis. Multiple viable tissue areas act as focal points for healing if

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Read before the Morton Society, May 19, 1951.

From the Department of Surgery, University of Rochester School of Medicine and Dentistry.

Dr. Dale is now in the Department of Surgery, Medical College of Alabama, Birmingham, Ala.

[1] Peck, F. B.: Penicillin: with Special Reference to Its Use in Infections Complicating Diabetes, Am. J. M. Sc. **208**: 581 (Nov.) 1944.

[2] Rose, D., and Hurwitz, D.: The Regional Injection of Penicillin in Local Infections, New England J. Med. **234**: 291 (Feb.) 1946.

[3] Kenney, J. M.: The Treatment of Superficial Pyogenic Infections by the Direct Injection of Penicillin, Surgery **21**: 588 (April) 1947.

[4] Kaplan, I. W., and Rabin, H.: The Local Injection of Penicillin in Acute Circumscribed Infections, Ann. Surg. **127**: 1202 (June) 1948.

[5] Bate, T. H.: The Treatment of Carbuncles by the Local Injection of Penicillin, Ann. Surg. **129**: 494 (April) 1949.

[6] Sanders, E. K., and Lockwood, J. S.: Transcutaneous Antibiotic Treatment of Localized Soft Tissue Infections, in MacLeod, C.: *Evaluation of Chemotherapeutic Agents*, New York Academy of Medicine, Section on Microbiology, Columbia University Press, 1949, no. 2, p. 103. Sanders, E. K., and Lockwood, J. S.: Recent Advances in the Chemotherapy of Surgical Infections, S. Clin. North America **29**: 431 (April) 1949.

they are not sacrificed by wide excision. Large collections of necrotic material must be allowed to escape, but in the usual carbuncle this is already occurring through the multiple sinuses, and opening the area does not expose large single pus pockets.

On the basis of control of spreading infection a treatment program was begun. The surgical principle of drainage of collected pus was not neglected, however, and from the beginning all sinuses were carefully observed for adequate drainage, and the carbuncle was inspected at intervals to be sure that no pus collections were undrained. This involved spreading sinuses open with a clamp, or passing a phenolized probe into them, but not making incisions or excisions.

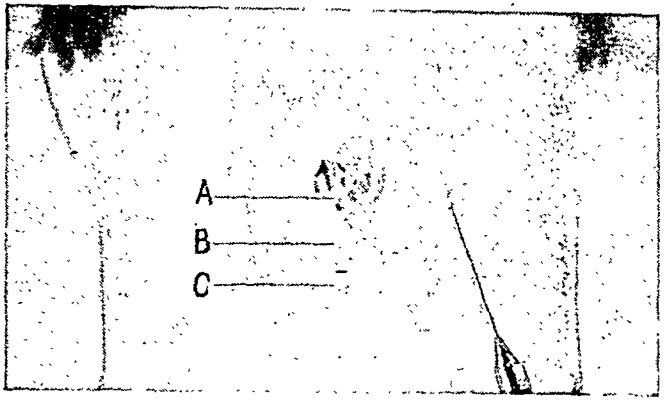

Fig. 1.—Areas of local penicillin injection about the carbuncle. The area of injection is emphasized as a raised area, which actually is never this prominent, since injection is into the subcutaneous tissue and not the skin. *A*, multiple sinuses. *B*, red inflammatory zone. *C*, palpable border of induration.

There were 14 patients in the group discussed here. One case occurred in 1948 as an isolated instance, and the other 13 were consecutive cases, all of which were followed by us. No lesion was accepted as a carbuncle unless there were multiple drainage sinuses that were either formed or incipient, an indurated border about the lesion, and no single large pus collection. Several cases of cellulitis and abscess were rejected as not conforming to the classic concept of a carbuncle in these respects.

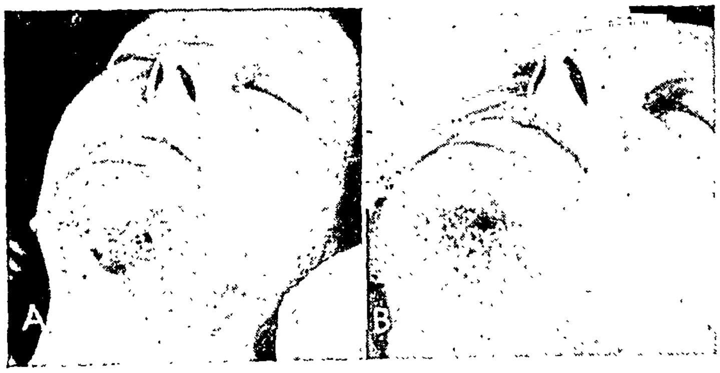

Fig. 2 (Case 3).—Carbuncle on the chin of a woman with diabetes who was treated in 1950-51. *A*, before injection of penicillin. *B*, four days after injection of penicillin about the periphery of the lesion.

METHOD OF TREATMENT

Penicillin for injection was prepared by mixing 1,000,000 units of crystalline penicillin with 5 cc. of saline solution and adding 5 cc. of 1 or 2% procaine solution. This proved the best way to avoid precipitation. After preparation of the area with benzalkonium (zephiran®) solution local injections were made about the periphery of the carbuncle into the fat to lay down a barrier of penicillin outside the woody area of induration composing the outer zone of the lesion. It was always emphasized that injection was to be made into the area peripheral to the inflammatory zone and not into it. By using four portals for injection, 300,000 to 600,000 units of penicillin were placed about the lesion (fig. 1). The actual injections were done by various physicians, and there appeared to be no discernible difference in results.

Following injection the patient was put at bed rest and penicillin was injected intramuscularly intermittently as prophylaxis against metastatic infection. Two patients were handled without this precaution, but we feel it is warranted as a rule. Warm wet compresses were applied locally, either at home or in the hospital. Drainage points were kept open where necessary by spreading the points of a clamp or introducing a phenolized probe. If an obviously necrotic tissue mass was present, or if one developed, it was excised by local débridement to hasten healing. No other type of incision or excision was done. In three instances x-ray therapy was given at the start of treatment before the outlined plan was instituted by one of us.

The lesion was measured daily, the peripheral borders of induration being used as points of reference. If 24 hours after penicillin treatment was begun the lesions appeared stationary or resolving, no further treatment was given. If not, another injection was given. If at 48 hours the inflammation was not definitely resolving, reinjection was always done. More injections were given as they seemed indicated in individual cases.

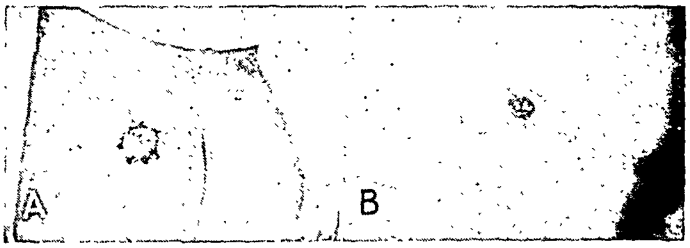

Fig. 3.—A carbuncle treated with local injections of penicillin. *A*, before treatment. *B*, four days after injection of penicillin about the periphery.

RESULTS OF TREATMENT

All of the 14 carbuncles treated were controlled well and healed satisfactorily. No metastatic infections occurred. An occasional satellite furuncle necessitated treatment. One carbuncle was injected in the inflammatory zone rather than outside. An immediate systemic reaction with fever occurred (case 2).

The usual result was relief of pain within 8 to 16 hours. At the end of 24 to 48 hours the process was ordinarily stationary or beginning to resolve, depending on the size and duration of the lesion. After this stage drainage persisted for four to five days, usually ceasing entirely as the sinuses became encrusted. The underlying induration at this point was still present but smaller, and there was minimal local tenderness. After several weeks only small skin dimples with occasional slight induration marked the site. In table 1 the data concerning all the patients treated is summarized. Because of particularly interesting features, three of these are reported in more detail.

REPORT OF CASES

CASE 1.—F. B., a 63-year-old white, nondiabetic man was admitted April 28, 1948, with a carbuncle of the abdominal wall of 14 days' duration. He was handled on an outpatient basis, receiving three consecutive daily local injections of 100,000 units of penicillin. After 25 days the lesion was completely healed. Five months later he was hospitalized with a 5 cm. carbuncle of the neck of 21 days' duration. A cruciate incision, with the patient under ether anesthesia, was made. After eight days of hospitalization he was followed in the clinic; the granulating wound was still healing at 30 days when he was last seen.

Comment.—This is the only case in the 1940 or 1947-48 series in which treatment was by local penicillin injection. The later neck carbuncle with the usual type incisional treatment forms an interesting contrast.

Comment.—This case demonstrated the danger of injecting penicillin into the carbuncle itself. A secondary extension was well controlled by reinjection.

CASE 3.—H. W., a 40-year-old diabetic woman, was admitted March 15, 1951, with a 10 cm. carbuncle of the chin of seven days' duration. On admission she was uremic, with a blood urea nitrogen level of 89 mg. per 100 cc., and was anemic, with a hemoglobin level of 8.5 gm. After study clinical diagnoses of diabetes mellitus with acidosis, intercapillary glomerulosclerosis with uremia, and cardiac decompensation were made. Treatment consisted of diabetic control, digitalization, administration of fluids and transfusions, parenteral administration of penicillin and local injection of penicillin about the carbuncle. It responded as expected (fig. 2), but her general condition continued to be poor and became progressively worse. The uremia increased and she died with pulmonary edema and cardiac failure.

TABLE 1.—*Data in Fourteen Cases of Carbuncles Treated with Local Injections of Penicillin in 1950-51*

							Treatment				
Patient	Age	Sex	Diabetes	Location	Duration, Days	Diameter, Cm.	X-Ray Therapy	Parenteral Penicillin, Days	Local Penicillin, Units	Days of Hospitalization	No. of Healing Days
H. D.	49	M	No	Neck	7	8	100 r	8	500,000 1st, 2nd, 3rd, and 6th days	8	22
F. B.*	63	M	No	Abdomen	14	Moderate	None	0	100,000 1st, 2nd, and 3rd days	0	25
F. N.	3	M	No	Scalp	30	Large	300 r	8	400,000 1st, 3rd, and 5th days	9	9
E. H.†	47	F	Yes	Right scapula	7	7	300 r	4	600,000 1st; 500,000 2nd; and 400,000 8th days	8	18
G. D.	54	M	Yes	Neck	5	8	None	4	300,000 1st, 2nd, and 5th days	5	14
R. R.	19	M	No	Neck	3	6	None	3	400,000 1st day	0	3 (soft, slight drainage)
R. H.	41	M	No	Neck	3	4	None	0	400,000 1st day	0	8
J. P.	25	M	No	Neck	4	6	None	5	500,000 1st and 2nd days	5	11
J. F.	50	M	No	Neck	6	Moderate	None	5	400,000 1st and 2nd days	7	9
G. L.	69	M	No	Neck	7	7	None	4	400,000 1st, 2nd, and 3rd days	7	7
H. F.	30	M	No	Neck	3	3	None	1 ‡	500,000 1st and 3rd days	0	7
H. W.§	40	F	Yes	Chin	7	10	None	12	400,000 1st, 2nd, and 3rd days	12	Died
R. M.	25	M	No	Back	6	7.5	None	1	300,000 1st and 2nd; 600,000 3rd and 4th days	4	?
L. M.	12	M	No	Buttock	7	7.5	None	0	400,000 1st and 3rd days	4	7

* Case 1. † Case 2. ‡ This patient received aureomycin for five days. § Case 3.

TABLE 2.—*Comparison of Treatment and Results in Three Series of Cases of Carbuncle*

					Anatomic Location		Diameter, Cm.		Duration, Days		Treatment						Duration of Hospitalization, Days		Time Required to Heal, Days		
Series and Years Treated	No. of Cases	Age Range, Yr.	Males, %	No. with Diabetes, %	Neck, %	Other, %	Range	Average	Range	Average	Cruciate Incision	Excision	No Surgery	X-ray	Penicillin Parenterally	Penicillin Locally	Range *	Average	Range	Average	Mortality, %
1, 1940 †	18	21-72	44	28	89	11	2-12.5	7.7	3-35	9.9	13	2	3	6	0	0	0-42	13.7	7-56	31	17
2, 1947-48	21	15-76	50	18	67	33	3-15	7.4	3-35	10.4	20	2	0	1	19	0	0-42	9.2	14-70	42	10
3, 1950-51	14	3-69	86	22	56	44	4-10	6.8	3-14	7.8	0	0	14	3	11	14	0-12	4.9	2-22	12.6	8

* The greatest number of days in each instance represents patients who died.
† In the 1940 series surgical treatment without penicillin was given; in the 1947-48 series both surgery and penicillin administered parenterally were used; and in the 1950-51 series only local penicillin therapy was given.

CASE 2.—E. H., a 47-year-old white diabetic woman, was admitted Jan. 23, 1950, with a 7 cm. carbuncle of the right scapular region of 7 days' duration. X-ray therapy with 100 r was given at once, the diabetic control program was started, and administration of penicillin parenterally was started. Local injection of 600,000 units of penicillin was done, not only about the periphery of the lesion but also *into it. The patient* became acutely ill, with severe local pain and temperature ranging between 38 and 38.8 C. Injection of 500,000 units of penicillin was done the next day, this time with care to inject none into the lesion. Resolution of the inflammation then began, and by the following day was definite. On the seventh day, because of a spread of tenderness and swelling inferiorly, 400,000 units of penicillin was injected about the new area. The extension of the lesion responded to this treatment rapidly. She was discharged on the eighth hospital day. By the 18th day there was only slight induration without tenderness to mark the site of the carbuncle.

Comment.—Therapy controlled the carbuncle, and by the fifth day it was obviously resolving. On the seventh day it was no longer a problem at all. The kidneys were, however, fatally involved. This was the only death in the series.

COMPARISON OF TREATMENT

All carbuncles diagnosed as such were studied for the years 1940 and 1947-48, the latter being a two-year series in order to approximate the number of cases in the 1940 and present series. No cases were omitted.

The patients in all three series were treated similarly as regards bed rest and hot compresses. The 1940 group of 18 patients did not receive penicillin, and most were treated by cruciate incisions or excisions under anesthesia. The 1947-48 series of 21 patients received parenteral penicillin therapy, and again all had incisions or excisions under anesthesia. The only patient not treated surgically was the one discussed in case 1, which is included statistically in the 1950-51 series since its treatment was similar to that group. In the 1950-51 series all patients received local penicillin therapy without surgery.

Table 2 summarizes the comparative statistics. The average duration of hospitalization in series 3 (1950-51) of 4.9 days as compared to 9.2 days for series 2 (1947-48) and 13.7 days for series 1 (1940) indicates an advantage of this regimen. The healing time of 12.6 days in series 3 as compared to 42 days in series 2 and 31 days in series 1 is considerably shortened. Without knowledge of series 1 and 2 except from the hospital record it appears that more of the carbuncles were larger and of longer duration in these groups than in the more recent series. This should be noted in comparing hospitalization and healing time. Nonetheless we think the recent series 3 compares favorably with the early ones in that hospitalization and healing time are decreased without increasing complications. We do not, however, interpret these statistics strictly, but feel that they indicate a trend. Certainly this is too small a group from which to draw sweeping conclusions. The cases in the 1950-51 series were consecutive, but did not happen to include any cases of large carbuncles in which surgical incision or excision would be necessary to control the infection at once to save life. Such cases will no doubt continue to occur occasionally, and surgery will be indicated at once.

SUMMARY AND CONCLUSIONS

A method of treatment in 14 cases of carbuncles with local penicillin therapy is described, consisting of injection of penicillin in concentrations of 100,000 units per cubic centimeter about the periphery of the lesion to a total of 300,000 to 500,000 units for a single or several daily injections. Results of this treatment combined with parenteral administration of penicillin, general rest, and local application of hot wet compresses are given. All carbuncles responded satisfactorily to these measures and without complications.

The series of carbuncles treated by this method of local penicillin injection is compared with all the carbuncles treated in 1940 (18 cases) by incision or excision without penicillin therapy, and with those treated in 1947-48 (21 cases) with incision or excision with penicillin therapy parenterally but not locally. This suggests that local injection therapy produces a more rapid healing of the lesion after a briefer period of hospitalization without an increase in complications.

No carbuncles have recently been seen that necessitated immediate surgical incision or excision as a lifesaving measure. These will no doubt continue to occur occasionally. Except in such cases, local penicillin therapy is at present our treatment of choice, although each carbuncle must be individually considered and carefully followed for response. Further study will be necessary to determine if there are any specific contraindications to this treatment.

PAINFUL PERIARTICULAR CALCIFICATIONS AT WRIST AND ELBOW: DIAGNOSIS AND TREATMENT

Irving I. Cowan, M.D.
and
Joseph R. Stone, M.D., Milwaukee

Painful periarticular calcifications about the wrist and elbow joints produce a disability commensurate with the shoulder syndrome due to calcific tendinitis or bursitis. Clinical and roentgenologic recognition of calcareous deposits about the wrist and elbow are also important, because these conditions are so disabling, yet so amenable to treatment.

The so-called subacromial calcific bursitis or tendinitis has been frequently reported in the literature in recent years, and its various methods of treatment are so well known as not to merit further discussion in this communication. Similarly, there have been numerous reports in the literature of calcific deposits in the soft tissues about the hip joint; however, there have been few references to calcific periarticular tendinitis involving the wrist and elbow joints.[1] We are reporting a series of 11 cases that illustrate the types of involvement of the soft tissues about the wrist and elbow, with special emphasis on the early recognition of this condition and its treatment with high voltage roentgen therapy.

CLINICAL FINDINGS

The history of these cases is quite typical, in that the onset is usually acute. In the superficial joints such as the elbow and wrist, edema and increased local heat, restricted motion, and muscle spasm are remarkable. About the wrist, the swelling is confined to the flexor surface, since in all our cases involving the wrist joint the pathological calcifications are located on the volar aspect. In the elbow, the swelling is limited to the lateral and posterior aspects, and the roentgen ray findings reveal soft tissue calcification adjacent to the lateral condyle of the humerus. Associated with these findings are a marked limitation of motion in the involved joint and a pronounced muscle spasm. The elbow and wrist are held in the semiflexed protective attitude, and the patient usually supports the involved extremity with the uninvolved arm. In the very acute cases the skin over the painful joint is erythematous and extremely sensitive to

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From the Department of Radiology, Marquette University School of Medicine (Dr. Cowan) and the Department of Orthopedic Surgery, Mount Sinai Hospital (Dr. Stone).

[1] (*a*) Hughes, E. S. R.: Acute Deposition of Calcium Near Elbow, J. Bone & Joint Surg. **32-B:** 30 (Feb.) 1950. (*b*) Seidenstein, H.: Acute Pain in Wrist and Hand Associated with Calcific Deposits; Report of Fifteen Cases, ibid. **32-A:** 413 (April) 1950. Milch, H., and Green, H. H.: Calcification About Flexor Carpi Ulnaris Tendon, Arch. Surg. **36:** 660 (April) 1938.

pressure, but we have never been able to demonstrate any fluctuation. The tenderness is sharply localized and exquisite in character, is confined to an area directly over the calcification, and corresponds to the calcific area demonstrated in the roentgenograms.

ETIOLOGY

The histories of our cases failed to reveal any traumatic precursor, nor was the occupation of the person a predisposing factor. This condition occurs in various age groups, but in this series the patients were chiefly between the ages of 40 and 60. There were nine women and two men, and all were members of the white race. The patients were distributed among various nationalities. In four cases there were symptoms and roentgen ray evidence of similar calcifications involving joints other than the wrist or elbow. In this series of cases the incidence in women was approximately five times as great as it was in men. This may be of some significance, but the small group of cases makes it difficult to prove sex relationship.

About half our female patients had passed the menopause, while others were about to enter it. Endocrine dysfunction may prove to be a factor in the development of the pathological calcifications. As to the direct etiology we are forced to theorize and wish to point out several interesting features. First, it is noted that the calcifications occur in areas characterized by heavy tendinous tissue such as is present on the lateral aspect of the elbow and on the volar surface of the wrist. These anatomic sites are similar in histological structure to the heavy musculotendinous cuff of the shoulder and to the tendons inserting into the greater trochanter of the femur. In the cases with wrist involvement, the calcific deposits were most frequently observed at the point of insertion of the flexor carpi ulnaris tendon into the pisiform bone, or of the flexor carpi radialis into the base of the second metacarpal. Second, whatever the cause may be, it is believed that there is focal necrosis of tendinous tissue, causing an alteration in chemical balance that results in the deposition of calcium salts. These opaque deposits in the shoulder and hip regions have been analyzed by others[2] and have been found to contain calcium carbonate and phosphate. Why some injured tendinous tissues heal by fibrous union and others by the deposition of calcium has never been satisfactorily determined. When the calcium deposit involves the tendon sheath or the adjoining bursa, then a chemical inflammatory reaction is produced that causes pain, swelling, erythema, loss of motion, and muscle splinting. In this way the acute symptomatology may develop.

We have not found it necessary to perform surgery in any of our cases, and we therefore cannot offer evidence as to the pathology of the involved tissue or chemical analysis of the calcareous deposits; however, Pedersen and Key[2] report a careful histopathological analysis of calcific tendinitis and bursitis about the shoulder, substantiating the anatomic location of the calcium and its effect on the adjacent tissues.

DIFFERENTIAL DIAGNOSIS

Myositis ossificans can be easily differentiated from para-articular calcifications because of the frequent history of trauma in the former. In myositis ossificans the calcifications are linear in distribution and follow the planes of the muscle fibers and the fascia, which is in contrast to the tendinous location of calcifications in the cases reported in this paper. Ossifying myositis does not produce localized heat or erythema of the skin over the affected part. In hypervitaminosis D[3] there is a history of intake of large doses of vitamin D ingested over a long period of time. Radiographic studies of the extremities show multiple extensive deposits of calcium rather than small localized collections. In hyperparathyroidism there is not infrequently a palpable tumor mass in the anterior portion of the neck. Radiographic survey of the bones may show multiple cystic lesions, usually in the long bones; bilateral renal calculi; and gallbladder calculi, in addition to the calcific deposits in the soft tissues. Blood chemistry studies in hyperparathyroidism are of some value from the standpoint of differential diagnosis. The serum alkaline phosphatase and serum calcium levels are elevated in most cases, and the serum phosphorus may be depressed. There is no localized swelling or heat, and several bones or joints may be painful.

Calcification of a hematoma is usually preceded by trauma, with discoloration of the overlying skin associated with localized heat, swelling, and tenderness. The calcification is circular, larger in size, and fairly sharply circumscribed in comparison with the type of calcification present in the para-articular structures in the cases here reported. Tuberculosis usually produces bone destructive lesions with paraosseous abscesses. There is marked joint destruction. The Mantoux test is frequently positive, and the roentgenogram of the chest may show active pulmonary foci. The aspirated material from the cold abscesses, when cultured or inoculated in guinea pigs, will reveal the presence of tubercle bacilli. The healing phase of this destructive process produces multiple calcific deposits about the joints, but the joints themselves show definite evidence of destruction.

In neurotrophic diseases,[4] especially in cases of transverse myelitis or of paralysis of the lower extremities following severe wounds that involve the spinal cord, calcifications may occur in the soft tissues. Some of the obscure neurotrophic diseases with paralysis may result in extensive calcific deposits in the soft parts, especially in the region of the pelvis and the hips. These calcifications are very extensive and widely distributed in relationship to the type of calcification described in this paper. In acute osteomyelitis the pain is usually localized to one area, and this finding is associated with increased local heat, swelling, tenderness, and loss of function. The toxicity is much more generalized, and there are chills, fever, and, often, a local soft tissue abscess. The roentgenograms indicate an osseous process rather than an extraosseous calcific deposit as noted in bursitis or tendinitis.

ROENTGEN DIAGNOSIS

Every patient with a history of acute onset of pain in the wrist and elbow, and physical findings as stated, should have a carefully performed roentgen examination of the wrist or elbow. This series of examinations should include not only the routine anterior-posterior and lateral views of the part but also special views; for example, roentgen studies of the elbow should include internal and external oblique views with the joint extended. In the wrist, the study should include not only internal and external oblique views but also radiographs made with the hand in ulnar and radial deviation while the wrist is in the posterior-anterior position. From a technical standpoint, the films should be taken with high speed technique; that is, short time exposure with intensifying screens. This technique is essential to eliminate motion due to severe pain in the part being examined. These radiographic studies should also include at least two exposures with lower kilovoltage than is ordinarily used for bone studies, in order to demonstrate soft tissue detail and thereby reveal even the smallest or minimal calcific shadows in the soft parts adjacent to the joints.

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[2] Pedersen, H. E., and Key, J. A.: Pathology of Calcareous Tendinitis and Subdeltoid Bursitis, Arch. Surg. 62:50 (Jan.) 1951.

[3] Christensen, W. R.; Liebman, C., and Sossman, M. C.: Skeletal and Periarticular Manifestations of Hypervitaminosis D, Am. J. Roentgenol. 65:27 (Jan.) 1951.

[4] Solovay, J., and Solovay, H. U.: Paraplegic Neuroarthropathy, Am. J. Roentgenol. 61:475 (April) 1949.

From the roentgen standpoint, the important differential diagnosis must always exclude the possibility of fracture. In the case of a fracture, the fragment of bone is usually homogeneous in character, in contrast to the irregular or spotty calcification in the extra osseous tissues. Also, in the case of a fracture, a defect can usually be demonstrated in the adjacent bone. At times it may be difficult to differentiate between a small, well-formed calcium deposit and an extra sesamoid bone (fig. 1). A sesamoid is smooth in outline and contains definite bone trabeculation, while the calcific nodule usually has a homogeneous density and may be slightly irregular or fragmented, and never contains bone trabeculations.

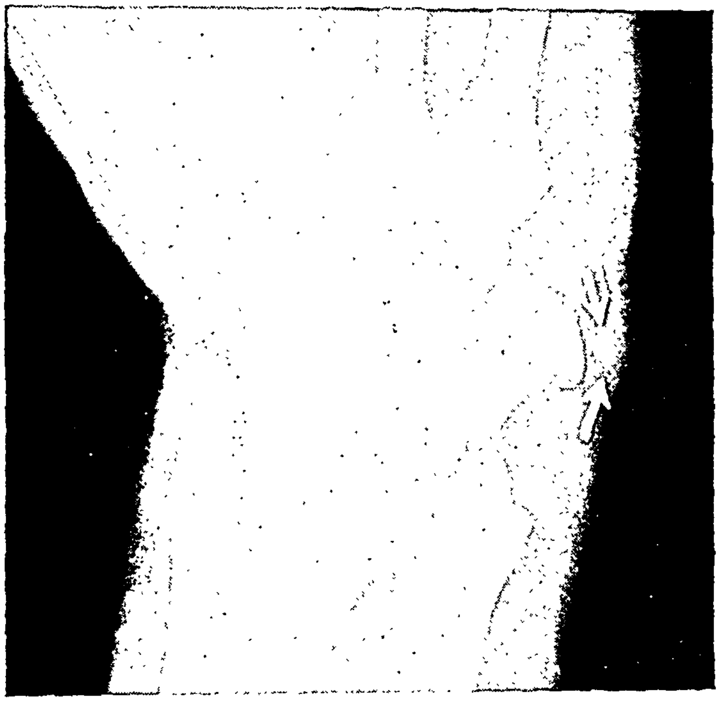
Fig. 1.—External oblique view of the wrist, showing calcium mass adjacent to pisiform bone resembling a sesamoid bone. Note localized soft tissue edema over region of calcium deposit.

Whether a calcific deposit is in the bursa or tendon sheath cannot be definitely established by the roentgen examination in every case. We believe that such critical and anatomic analysis of the films is not necessary from a clinical standpoint. Confirmation of the clinical impression and the general anatomic location of the calcification is the function of the radiographic study. Clinically, in our cases the amount of calcium present in the soft tissues was unrelated to the severity of the clinical symptoms and findings.

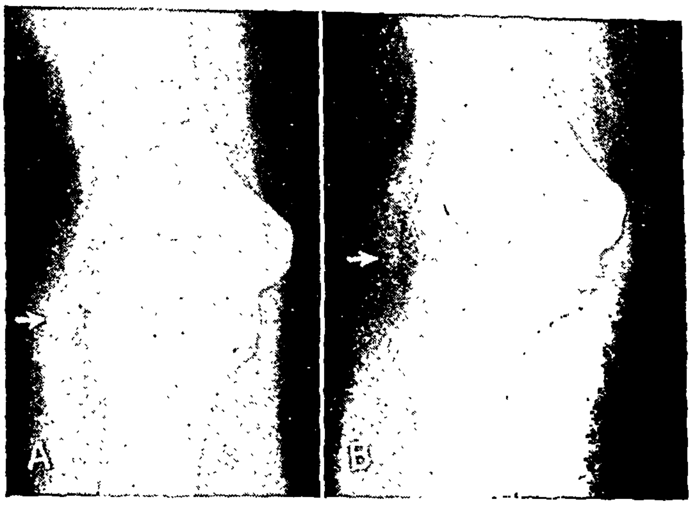

Fig. 2.—*A*, anterior-posterior view of the elbow, showing homogeneous but fragmented calcific mass at the lateral aspect of the humeral condyle. Note soft tissue edema in region of calcium deposit. *B*, anterior-posterior view of elbow one year after roentgen therapy, showing complete disappearance of the calcium deposit.

ROENTGEN THERAPY

Many forms of treatments have been advised for painful periarticular calcifications, varying from simple rest and immobilization to radical surgery. Hughes,[1a] of Australia, recently reported three cases of painful calcification about the elbow that were treated surgically. Seidenstein [1b] also reported cases of painful calcification about the wrist and hand, and used immobilization, rest, and procaine hydrochloride (novocaine®) injection with good results. G. Sandstrom,[5] of Stockholm, in 1926 was among the first to report the successful use of roentgen therapy in bursitis and allied conditions. Lattman,[6] in this coun-

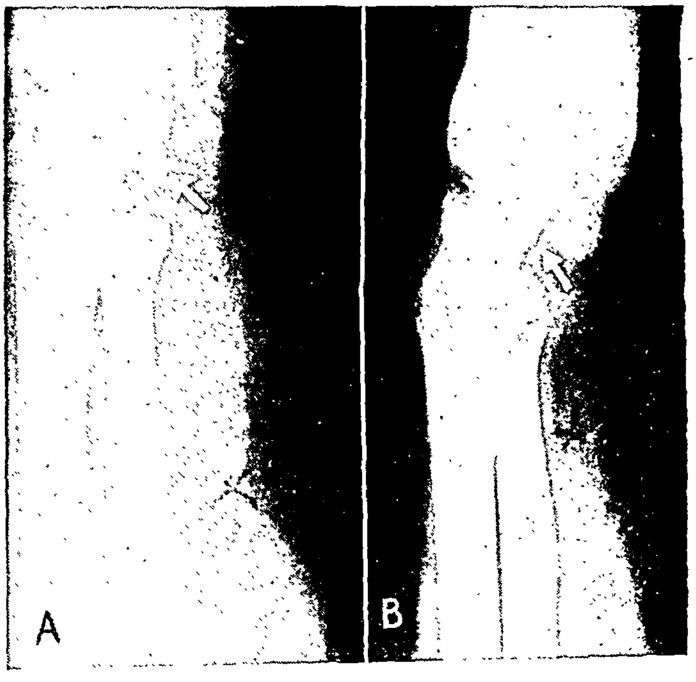

Fig. 3.—*A*, external oblique view of the wrist, showing dense, irregular calcium mass between the pisiform and the triangular bone. Note soft tissue edema about the wrist. *B*, external oblique view of the wrist approximately five months after the roentgen ray therapy, showing complete reabsorption of the calcium.

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[5] Sandstrom, D.: Peritendinitis Calcarea; Common Disease of Middle Life; Its Diagnosis, Pathology and Treatment, Am. J. Roentgenol. **40:** 1021 (July) 1938.

try, in 1936 reported good results using roentgen therapy in painful extra-articular calcifications of the shoulder. Others [7] have also indicated excellent results with this modality. The theoretical indication for roentgen therapy is based on the following effects of x-radiation on the tissues about the joint: (1) analgesia through its effect on nerve fibers in the involved area, and (2) a breakdown of the leukocytes in the treated area. It has been well established by careful histological study that the leukocytes are broken down; that is, the cell membrane is ruptured by x-radiation and the intracellular substance is liberated. This substance may possibly influence the chemical changes in the region of the deposition of calcium and produce a reabsorption of the calcium. It is well known that calcium deposits about the joint have undergone complete absorption after the application of roentgen therapy or after other forms of treatment. This is illustrated in figures 2 and 3. Every patient in this group that had follow-up roentgenograms revealed partial or complete disappearance of the calcific deposits. Pohle and Morton [8] reported complete and satisfactory results in 84% of their patients with calcific bursitis and tendinitis treated with roentgen ray therapy.

All of our patients received roentgen ray therapy, with the following technical factors: 200 kvp, 50 cm. distance, 0.25 mm. added copper filter, 20 ma., and a half-value layer of 0.85 mm. Cu. Treatments were given daily in the acute cases in doses of 150 to 200 r (dose measured in air without backscattering). In the subacute cases the therapy was administered every other day. A total dose of 450 to 900 r was used, depending on the severity and duration of the clinical symptoms. In two cases in this series, the reaction after the first two treatments was very severe, with definite increase in edema and in intensity of pain, which lasted for about 24 to 48 hours. Roentgen therapy was continued in spite of this reaction, and all of the clinical symptoms and findings disappeared within a few days. In most cases there was a good therapeutic response beginning with the first treatment, as indicated in the table. In none of our cases was there a recurrence of symptoms, with the longest follow-up period being four years.

Summary of Data on 11 Cases of Painful Periarticular Calcifications About Wrist and Elbow

Case No.	Patient	Age	Sex	Joint Involved	Duration of Clinical Symptoms, Days	Type of Previous Therapy	Total Dose of Roentgen Therapy	No. of Days After First X-Ray Treatment for Pain Relief	No. of Days for Complete Clinical Recovery	End Result
1	R. R.	60	F	Left wrist	3	Immobilization and splint	550 r	2	23	Excellent
2	R. F.	40	F	Left elbow	30	Hot compresses	750 r	6	12	Excellent
3	B. S.	65	F	Right wrist	4	None	900 r	4	11	Excellent
4	H. K.	56	F	Right wrist	5	Analgesics	600 r	3	9	Excellent
5	M. M.	40	F	Left wrist	5	Immobilization and splint	450 r on each of 2 fields	4	13	Excellent
6	R. C.	40	F	Left wrist	98	Analgesics Hot compress Diathermy Splinting Hydrotherapy Massage Immobilization, sling, and splint	550 r on each of 2 fields	12	18	Excellent
7	K. E.	54	M	Left wrist	14	None	480 r	3	6	Excellent
8	M. R.	36	F	Right elbow	5	None	800 r	1	8	Excellent
9	A. C.	36	F	Left elbow	5-7	Analgesics	700 r	10	16	Good
10	M. L.	47	F	Left elbow	28	None	800 r	7	14	Good
11	G. S.	47	M	Right elbow	59	Analgesics	900 r	14	30	Good

SUMMARY

1. A series of 11 patients with painful calcific deposits about the wrist and elbow is reported. Of the 11 cases, 6 involved calcifications about the flexor aspect of the wrist, and 5 about the lateral aspect of the elbow joint.

2. Diagnostic criteria consisted of: (*a*) history of acute pain, swelling, and loss of motion of the wrist or elbow, associated with localized tenderness, and (*b*) roentgen ray evidence of varying quantities of calcium in the soft tissues about the wrist and elbow joints.

3. Roentgen therapy was the only treatment used in this series and proved effective in all of them. Follow-up studies showed either partial or complete reabsorption of the calcium deposit and complete relief of clinical symptoms. Pain relief by this method of treatment was relatively rapid, and symptoms did not recur, with our longest follow-up being four years. The amount of calcium deposit was not related to the severity of the clinical symptoms or findings.

425 E. Wisconsin Ave. (Dr. Cowan).

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6. Lattman, I.: Treatment of Subacromial Bursitis by Roentgen Irradiation, Am. J. Roentgenol **36**: 55 (July) 1936.

7. Gelber, L. J.: Roentgen Therapy of Arthritides and Ligamentous, Tendinous and Bursal Inflammations, M. Rec. **159**: 415 (July) 1946. Hodges, F. M., and Boyer, R. A.: Roentgen Therapy of Bursitis, Virginia M. Monthly **75**: 547 (Nov.) 1948.

8. Pohle, E. A., and Morton, J. A.: Roentgen Therapy in Arthritis, Bursitis and Allied Conditions, Radiology **49**: 19 (July) 1947.

X-ray Examination of Fractures.—Many unnecessary requests for radiography are made because failure to X ray a patient who is later found to have a fracture may be deemed neglect. The legal attitude is open to the criticism that an x-ray examination can be made and yet gross omissions in the clinical examination and inexperienced interpretation of the radiographs may still mean neglect. Careful attention to the clinical aspect would prevent many serious blunders, save x-ray film, and probably be of greater value to the patient.—James F. Brailsford, M.D., Factors Which Influence the Value of a Radiological Investigation, *Lancet,* April 5, 1952.

J.A.M.A., June 7, 1952

GASTRIC LESION OF LOEFFLER'S SYNDROME

REPORT OF A CASE WITH INFLAMMATORY LESION SIMULATING CARCINOMA

Jay P. Ruzic, M.D., John M. Dorsey, M.D., Harry L. Huber, M.D.
and
S. Howard Armstrong Jr., M.D., Chicago

In 1932, William Loeffler, professor of medicine at the University of Zurich, first recognized an unusual allergic syndrome. Loeffler listed three criteria as characteristic: (1) a mild afebrile illness of short duration with a paucity of general findings, (2) shifting and transient pulmonary roentgenographic changes, and (3) a concomitant but variable increase of blood eosinophils.[1] Since 1932, however, many cases have been reported that vary considerably from Loeffler's requirements. Some of the patients in the reports were chronically ill with fever, cough, increased sedimentation rate, and pulmonary infiltrations that had persisted for many weeks or months. Even though the allergic process in the lungs is usually benign, this is not always the case, and, since the basic mechanisms involved are probably the same, the concept of Loeffler's syndrome has been enlarged. Since Loeffler's syndrome was recognized, transient eosinophilic infiltrations have been reported in organs other than the lungs. In the following case, a transient eosinophilic inflammatory lesion of the stomach, associated with a high eosinophil level, occurred in a patient with a history of so-called Loeffler's syndrome.

REPORT OF CASE

A 53-year-old white married man was admitted to the Presbyterian Hospital on Oct. 10, 1950, complaining of right lower quadrant pain, diarrhea, and low grade fever of two days' duration. His eating and drinking habits were normal. There had been no bloody or tarry stools, and, aside from the present illness, no recent change in bowel habits had been noted. He had maintained his weight of 150 lb. (68 kg.) without difficulty. About three weeks prior to admission to the hospital, he first noticed nausea accompanied by occasional vomiting, diarrhea, and epigastric distress. An "asthma remedy" that had been used for several months was stopped, and aureomycin, 250 mg. every four hours, was taken for two days, with some lessening of the gastrointestinal symptoms but with a gradual increase in the asthmatic symptoms. On Sept. 26 he consulted one of us (H. H.) and was found to have a white cell count of 11,300, with 56% eosinophils. A chest roentgenogram (fig. 1*A*) showed pronounced clouding of both apexes almost identical in appearance to a transient cloudiness observed two years previously. Aureomycin in 250 mg. doses was again prescribed, with some lessening of all symptoms. On Oct. 10 right lower quadrant tenderness developed and the patient had a temperature of 101 F (38.3 C) and a white cell count of 14,500, with 52% eosinophils. He was hospitalized for observation.

The medical history revealed that the patient had been well except for chronic rhinitis until early 1945, at which time he had several nasal polyps removed. Shortly thereafter, symptoms of mild dyspnea and wheezing began, and within two months they became so severe that injections of epinephrine (adrenalin®) were required for relief. Skin sensitization tests were made, and dietary restrictions were started, but, because the attacks of asthma continued to be severe and mental disorientation developed, the patient was hospitalized and given insulin shock therapy by his physician. During this period, when the patient felt dissociated from the world and yet in command of profound revelatory truths, the asthma subsided entirely. Subsequently, the feeling of dissociation subsided and has not recurred, so that when he has not been incapacitated by asthma, the patient has been active in business.

One month after he was discharged from the hospital, his wheezing respirations reappeared, and he was relieved somewhat by epinephrine spray. Skin tests were repeated, with very questionable positive findings. He was treated with desensitization to house dust, which aggravated his symptoms. In March, 1946, pneumonia developed and the patient was treated with penicillin and sulfonamides, which caused exacerbation of the asthma. Chest roentgenograms in June, 1946, (fig. 2) were negative except for a small amount of thickening of the apical pleura bilaterally. In October, 1946, he was admitted to another hospital because of chronic sinusitis and asthma. Roentgenograms showed bilateral maxillary sinusitis and roentgenographically clear lung fields. A differential blood cell count revealed 8% eosinophils. The patient showed noted improvement shortly after the maxillary sinuses were cleared surgically.

In September, 1947, because of persistence of the asthma and cough, the patient was admitted to another hospital. During the early part of his stay severe asthmatic symptoms developed, and helium and oxygen inhalations were tried without beneficial effects. Chest roentgenograms showed a rapidly changing picture. At first, there was dense clouding of the right apex, with a lesser amount of infiltration beneath the right apical pleura (fig. 3*A*). This was interpreted as possibly advanced pulmonary tuberculosis. Two months later, roentgenograms (fig. 3*B*) showed marked regression of the apical changes, with minimal soft densities in both apexes. Although it was thought that the patient had minimal tuberculosis, repeated examinations of the sputum were negative for acid-fast organisms. One differential count showed 6% eosinophils.

Because his asthmatic symptoms continued to be severe in spite of the various medications, the patient was again hospitalized, in November, 1949. His symptoms were severer after a short course of pyrogen therapy. Corticotropin (ACTH) therapy was started in late November, 1949, and resulted in very transitory mild relief at first, with no benefits on continuation of the therapy. The attacks of asthma continued to be more or less severe but were controlled to some extent with epinephrine and iodides until Sept. 26, 1950, when the patient consulted one of us (H. H.), as stated previously.

On the patient's admission to this hospital, physical examination showed him to be anxious but not acutely ill, well developed, and apparently in good health. His temperature was 99.2 F (37.3 C), pulse rate 70, and blood pressure 110/70 mm. Hg. The patient's right pupil was noted to be larger than the left, but the neurological examination gave otherwise normal results. This finding had not been reported on previous admissions to other hospitals and had not been noted by the patient. The chest was barrel shaped, with evenly distributed, dry, musical rales and a wheezy, prolonged expiration. The heart rhythm was irregular because of premature beats. The exami-

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Dr. Ruzic is now at the Department of Surgery, University of Colorado Medical Center.

Dr. Dorsey is now Chairman, Department of Surgery, Evanston Hospital, Evanston, Ill.

Some of the illustrations have been omitted from THE JOURNAL *and will appear in the authors' reprints.*

From the Rush Departments of Surgery and Medicine of the Presbyterian Hospital of the City of Chicago and the College of Medicine, University of Illinois.

This clinical study is part of a series of investigations of hyperimmune mechanisms in disease, supported, from a laboratory standpoint, by the Otho S. A. Sprague Memorial Institute of Chicago.

Drs. Fay H. Squire, R. M. Potter, and John W. Clark assisted in the interpretation of roentgenologic studies, and Drs. George M. Hass and Henry Tesluk assisted in the interpretation of microscopic sections.

[1] Loeffler, W.: Zur Differential-Diagnose der Lungeninfiltrierungen: Über flüchtige Succedan—Infiltrate (mit Eosinophilie), Beitr. Klin. Tuberk. **79:** 368, 1932; Die Flüchtigen Lungeninfiltrate mit Eosinophilie, Schweiz. med. Wchnschr. **66:** 1069 (Nov. 7) 1936.

nation of the abdomen was normal except for mild right lower quadrant tenderness.

Blood studies showed 12.5 gm. of hemoglobin, with 4,000,000 red cells and 11,400 leukocytes, 27% of which were neutrophils, 18% lymphocytes, 2% monocytes, and 53% eosinophils. The sternal marrow was within normal limits except for a high proportion of eosinophilic leukocytes. The hematocrit was 43%, and the sedimentation rate was 32 mm. in one hour. The total protein level and the albumin and globulin distribution, both by the Howe method and by electrophoretic methods, were within normal limits.

The sputum showed no tubercle bacilli or fungi on smear and culture. No atypical cells were seen in the sputum cell block. Repeated stool examinations were negative for occult blood, cysts, ameba, and pus. Intradermal tests were negative for histoplasmosis, blastomycosis, coccidioidomycosis, and trichinosis. The trichinella complement fixation test was also negative. An electrocardiogram showed ventricular premature beats and left axis deviation. The chest roentgenogram showed a normal heart shadow and lung fields (fig. *1B*). There was thickened pleura in both apexes. When this film was compared with previous roentgenograms (fig. *1A* and *3A*), it was evident that the apical clouding had disappeared.

A roentgenogram of the colon was normal, but food and fluid were reported in the stomach. Stomach roentgenograms were repeated with the patient on a liquid diet and after he had had nothing by mouth for 12 hours, but fluid was still present.

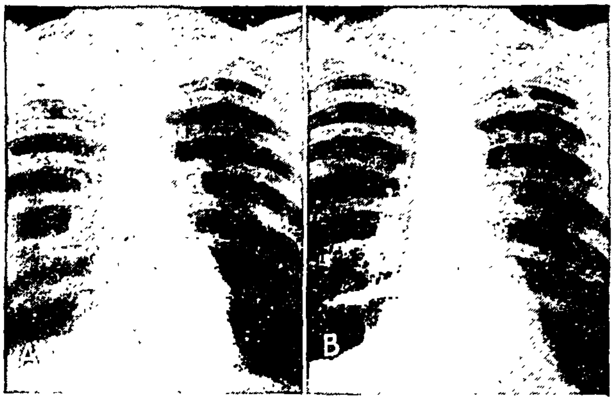

Fig. 3.—*A*, chest roentgenogram made Sept. 5, 1947, showing dense clouding of the right apex and spotty infiltration in the major portion of the right upper lobe. There is also clouding of the left apex, with a lesser amount of infiltration beneath the apical pleura. *B*, chest roentgenogram made Nov. 3, 1947, showing regression of apical changes.

Finally, the stomach was aspirated before and during fluoroscopy, and a large filling defect was seen to involve the lesser curvature of the stomach, beginning 2 in. (5.08 cm.) below the cardia and extending to about 1 in. (2.54 cm.) from the pylorus (fig. 4 and 5).

Because of the previous upper lobe clouding, the allergic background of the patient, and the high blood and bone marrow eosinophil level, it was suspected that the gastric lesion might not be attributable to carcinoma, particularly in view of the fact that repeated stool examinations had been negative for blood. Nevertheless, the x-ray findings were sufficiently characteristic of carcinoma, so that little choice was left other than to advise surgery.

The patient was operated on by one of us (J. M. D.) on Oct. 29, 1950, and it was found that the stomach wall was greatly thickened from the cardia to the pylorus. This area was red-brown, and through the serosal surface could be seen elevated, miliary, yellow-brown plaques. Some of these had coalesced to form larger subserosal nodules. No definite tumor was palpable. The abdomen showed no evidence of tumor, and no other organs were involved. There was a subacute inflammatory reaction between the stomach, liver, and diaphragm, as evidenced by easily separated, fibrinous adhesions, which bled rather easily. A gastrotomy was performed, and a section of stomach wall including serosa and mucosa was sent to the laboratory. With the stomach open, it was apparent that there was no pronounced change in the mucosa. There was no ulcer or tumor demonstrable within the stomach lumen.

Histologically (fig. 6 and 7), the biopsy specimen from the stomach showed a chronic inflammatory process about the small vascular channels in the submucosa, muscularis, and serosa. There was also considerable widening of the submucosa and serosa. The inflammatory reaction was most pronounced in the serosal zone and consisted of a perivascular infiltration of lymphocytes, a few macrophages, giant cells, and fairly large numbers of eosinophils. The chronic lesions seemed to have evolved from acute areas of necrosis involving muscle and collagen. No organisms or parasites could be detected. It seemed likely that this was part of a generalized process, and there was some suggestion that a portion of it might be caused by an allergy or some condition such as periarteritis. A biopsy

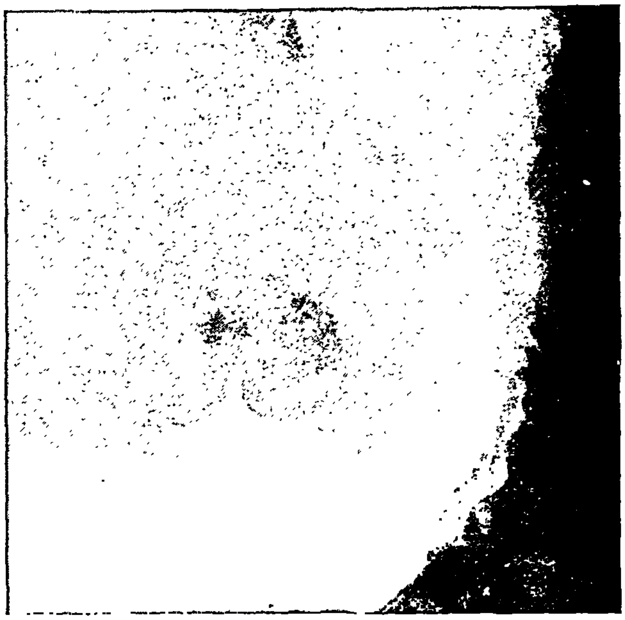

Fig. 5.—*Stomach roentgenogram made Oct. 20, 1950, reveals a filling defect that involves the lesser curvature of the stomach, beginning about 2 in. (5.08 cm.) below the cardia and extending to about 1 in. (2.54 cm.) from the pylorus. There is stiffening of the mucosal pattern. Diagnosis: carcinoma of the stomach.*

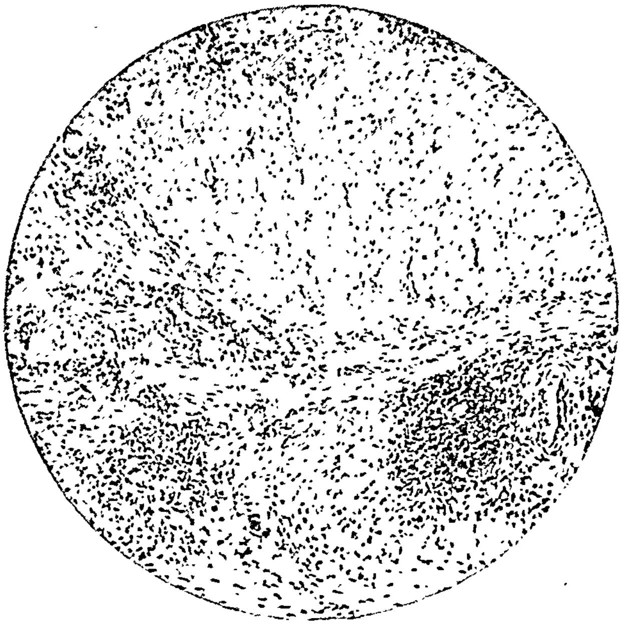

Fig. 6.—Histological section of biopsy specimen from stomach.

specimen of striated muscle of the abdominal wall was essentially normal, however. The patient had a smooth postoperative course and was discharged on the 14th postoperative day. Stomach fluoroscopy in January, 1951, gave no evidence of the previous lesion, and the stomach appeared normal (fig. 8). Chest roentgenograms were also within normal limits. A differential blood cell count showed 3% eosinophils. In June, 1951, the blood eosinophils were 5%.

REVIEW OF LITERATURE

A review of the literature for similar gastric lesions revealed several interesting cases. Vanek [2] reported the cases of six patients in whom the submucosa of the gastric antrum showed granulation tissue of a peculiar type associated with eosinophilic infiltration. In these patients, who had suffered from gastric disorders of various kinds, lesions were observed that consisted of loose, collagenous tissue with fibroblasts, lymphocytes, and eosinophilic polymorphonuclear leukocytes in the submucosa. This caused a bulging of the mucosa and, in some cases, even a polypous formation. Vanek could find no allergic factors in the clinical histories of his patients, and there was no eosinophilia.

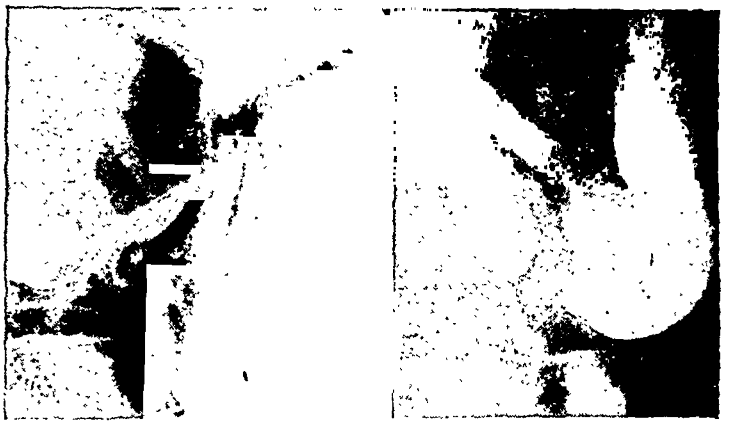

Fig. 8.—Stomach roentgenograms made Jan. 2, 1951. Note that the rugae are parallel, peristaltic waves pass to end of the antrum, and the duodenal cap fills. There is no evidence of obstruction. The stomach is normal.

In 1949 Moloney [3] reported the case of an adult in whom there was hypertrophy of the pylorus with massive eosinophilic infiltration, associated with blood eosinophilia. Because of obstructive symptoms, a gastroenterostomy was performed after a gastrotomy had revealed a fixed mucosa in the region of the pylorus. Microscopy showed hypertrophied muscle fibers with a marked cellular infiltration, consisting predominantly of eosinophilic leukocytes, in the interstitial perivascular connective tissue. Sound evidence of allergic causes was lacking. Herrera and de la Guardia [4] recently reported a case of pyloric stenosis produced by an inflammatory process with infiltration of eosinophilic leukocytes in the gastrointestinal wall, provoking a pseudotumor obstructive syndrome for which an extensive partial gastrectomy was performed. The patient did not have eosinophilia in the circulating blood in the preoperative phase, but in the days following surgery he showed a progressive rise in eosinophils to 20.5%.

Of more interest is the case reported by Kaijser [5] in 1937. The patient was 53 years old and, since his youth, had been known to be allergic to onions; he had vomited after eating the smallest quantity. For 12 years he had had gastric complaints. The diagnosis of gastric ulcer was made, and he was repeatedly treated by diet. Roentgenograms suggested an ulcer of the lesser curvature, about 3 cm. above the pylorus. At operation, the pylorus was found to be largely adherent to surrounding structures, and the serosa was thickened and scarred. The resected part of the stomach showed diffuse thickening of the walls, which was caused chiefly by edema of the submucosa. Neither gross nor microscopic examination revealed an ulcer. In the superficial layer of the submucosa there was considerable inflammatory infiltration consisting of neutrophilic leukocytes and numerous eosinophilic leukocytes. The muscularis mucosa was split up by the infiltration of eosinophilic leukocytes. In places, the submucosa showed numerous dilated lymphatic vessels, some of them filled with eosinophilic leukocytes, lymphocytes, and endothelial cells. These last were swollen and proliferating, so that they obliterated the lumen. In this last report, the allergic history and the lesion were quite similar to that found in our patient.

COMMENT

With the broadening of our knowledge concerning connective tissue and vascular reactions, it has become evident that many conditions believed to be distinct disease entities are closely related, the clinical manifestations depending on the organ or organs involved and the degree and stage of the allergic reaction. H. Bergstrand [6] reported autopsy findings on four patients who had a variety of allergic symptoms, of which asthma was the most conspicuous. Histological examination revealed, apart from the ordinary asthmatic lesions, vascular changes in the lungs and other organs characteristic of periarteritis nodosa and rheumatoid arthritis. Furthermore, there were foci of connective tissue exhibiting fibrinoid degeneration and rheumatic granulomas. The other lung changes were similar to those described by von Meyenburg [7] as being characteristic of Loeffler's syndrome, namely, interstitial inflammation and serous exudation, with eosinophils and giant cells in the alveoli. Such syndromes as rheumatoid arthritis, periarteritis nodosa, rheumatic carditis, and transient lung infiltration with eosinophilia are regarded by Bergstrand as equivalent manifestations of an antigen-antibody reaction localized to different organs.

The degree of the allergic reaction may be important. Wilson and Alexander [8] reported an 18% incidence of bronchial asthma in 300 cases of periarteritis nodosa. In the patients with both asthma and periarteritis, the eosinophil level averaged 53.5%, with a range from

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[2] Vanek, J.: Gastric Submucosal Granuloma with Eosinophilic Infiltration, Am. J. Path. **25**: 397 (May) 1949.

[3] Moloney, G. E.: Pyloric Hypertrophy with Eosinophil Infiltration, Lancet **256**: 412 (March 5) 1949.

[4] Herrera, J. M., and de la Guardia, J.: Un raro caso de eosinofilia gastro-intestinal motivadora de un cuadro organico de estenosis pilorica, Arch. Hosp. Santo Tomás **3**: 19 (Jan.-March) 1948.

[5] Kaijser, R.: Zur Kenntnis der allergischen Affektionen des Verdauungskanals vom Standpunkt des Chirurgen aus, Arch. f. klin. Chir. **188**: 36, 1937.

[6] Bergstrand, H.: Morphological Equivalents in Polyarthritis Rheumatica, Periarteritis Nodosa, Transient Eosinophilic Infiltration of the Lung, and Other Allergic Syndromes, J. Path. & Bact. **58**: 399 (July) 1946.

[7] von Meyenburg, H.: Das Eosinophile Lungeninfiltrat: Pathologische Anatomie und Pathogenese, Schweiz. med. Wchnschr. **72**: 809 (July 25) 1942; abstracted, J. A. M. A. **121**: 626 (Feb. 20) 1943.

[8] Wilson, K. S., and Alexander, H. L.: The Relation of Periarteritis Nodosa to Bronchial Asthma and Other Forms of Human Hypersensitiveness, J. Lab. & Clin. Med. **30**: 195 (March) 1945.

11% to 84%. They found that the asthmatic attacks of those patients in whom periarteritis later developed were very intense, and it was their feeling that the intensity of the attacks (or the intensity of the underlying mechanism causing them) was probably one of the factors predisposing to periarteritis, a rare complication of asthma. The stage of the allergic reaction may also be important in determining the clinical entity produced. The transition from a readily reversible to less easily reversible hypersensitive histological sequences is well seen in the classic studies of Arthus [9] on the rabbit. The phenomenon is demonstrable to only a limited extent in guinea pigs and not at all in many other experimental animals but does occur in man.

The pathogenesis of the gastric lesion is here no clearer than the pathogenesis of most nonspecific granulomas. The allergic nature is suggested by the bronchial asthma, nasal polyps, abdominal pain with diarrhea, transient infiltration of the lungs, eosinophilia, and disappearance of the gastric lesion within a short period of time. The late age of onset, the high eosinophil level, the severity of the asthmatic paroxysms, and the fact that extrinsic allergens such as pollens or foods did not precipitate attacks, identify this as a case of intrinsic asthma. In this patient and in most cases of asthma associated with periarteritis, the pathogenic allergen is unknown.

It is apparent from this man's history that the syndrome was more extensive than in Loeffler's description. The pulmonary infiltrations were recurrent and somewhat slower in disappearing, and the asthma was very severe; however, many authors have described cases in which chronicity was the outstanding feature and in which there were severe asthmatic symptoms. Thus, the original concept of Loeffler's syndrome as a distinct disease entity is changing; the range of reactions may be transitory, chronic, recurrent, or even irreversible. Depending on the degree of tissue response, seemingly separate diseases may be produced that are in reality different phases of an allergic reaction. In the early stages, these changes are entirely reversible, as in Loeffler's cases, while with repeated attacks irreversible damage occurs to produce a more chronic inflammatory involvement, as in some cases of lung infiltration associated with eosinophilia and as occurs in classical periarteritis.

If we may be allowed to extend Loeffler's syndrome to include more chronic infiltrations of the lung with eosinophilia associated with severer symptoms, it may not be improper to include transient infiltrations of other organs under this heading. The same fundamental process is occurring but in different organs. This case can be thought of as presenting Loeffler's syndrome in the stomach as well as in the lungs. It suggests that in Loeffler's syndrome involvement of any tissue may be a feature.

Other authors have reported eosinophilic inflammatory lesions occurring in association with Loeffler's syndrome. Cases have been reported by Harkavy [10] in which attacks of asthma were accompanied by pulmonary lesions with eosinophilia and reactions of serous membranes including pleura, pericardium, and peritoneum. Cases of Loeffler's syndrome and associated pericarditis with effusion have been reported.[11] Loeffler's syndrome with eosinophilic infiltration of the perilymph nodes, epididymis, and musculature has been reported.[12] A combination of transient pulmonary eosinophilic infiltration and periarteritis nodosa has been reported in only a few isolated cases.[13] To our knowledge, the association of transient infiltration of the lungs, transient eosinophilic infiltration of the stomach, and transient blood eosinophilia has not heretofore been reported.

SUMMARY

1. The concept of Loeffler's syndrome is presented. It is suggested that Loeffler's criteria are too limited, because they exclude a variety of conditions in which the same process is operating.

2. A case is described of transient blood eosinophilia with a transient eosinophilic lesion of the stomach in a patient with a history of so-called Loeffler's syndrome.

3. The findings, after a review of the literature for similar gastric inflammatory lesions, are reported.

4. There is a discussion of the relation between the phase of the allergic reaction and the organs involved to the disease entity produced. A concept of Loeffler's syndrome is presented that embraces all the conditions in which there is involvement of tissues with a transient eosinophilic inflammatory reaction as part of an allergic process.

1753 W. Congress St. (Dr. Armstrong).

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10. Harkavy, J.: Vascular Allergy, J. Allergy **14**: 507 (Nov.) 1943.

11. Dickie, H. A., and Grimm, E.: Loeffler's Syndrome with Associated Eosinophilic Polyserositis, Am. J. Med. **7**: 690 (Nov.) 1949.

12. Maier, C.: Das flüchtige eosinophile Lungeninfiltrat: Zusammenfassende Ergebnisse von über 100 Beobachtungen, Helvet. med. acta. **10**: 95 (April) 1943.

13. Tomenius, J.: Loeffler's Syndrome—Periarteritis Nodosa, Acta. med. Scandinav. **133**: 55, 1949.

Keeping Abreast in Medicine.—The physician who neglects his studies for the few first years after graduation, will seldom resume them. In many respects, this is one of the most important periods of his whole life. The omissions of youth may be supplied—those of manhood are fatal to our prospects, in proportion to their number and magnitude. The young physician is not aware how soon his elementary knowledge—much of which is historical and descriptive, rather than philosophical—will fade from his mind, when he ceases to study. That which he possesses, can only be retained by new additions. He cannot remain stationary; the moment he ceases to acquire, he loses; and this is true, not merely of professional, but of classical and general knowledge. . . .

. . . But he must not merely review, he must *extend* his professional studies. Previous to graduation, the most industrious student can study but a small part of the books, which are current in the profession. He has had before him but a few specimens in each department—a large portion remain to be studied. In this duty he should proceed with method; and I will mention two principles which should govern him:—First, he ought successively to undertake the study of particular diseases, or groups of diseases, and seek, in all the books consecutively, for what relates to them. In this manner, he will form his own monographs. Secondly, when actual cases of disease present themselves, he should read whatever may be within his reach in reference to them. Such readings are more profitable than any others, because the motives which prompt him, sustain his attention and invigorate his understanding.—Daniel Drake, M.D., 1832, Practical Essays on Medical Education and the Medical Profession in the United States, Baltimore, The Johns Hopkins Press, 1952, pages 61-62.

THREE-STAGE TRACHEOBRONCHIAL RECONSTRUCTION FOR TUBERCULOUS STENOSIS

Paul W. Gebauer, M.D., Honolulu

Surgical treatment of tracheobronchial deformities permits conservation of undamaged lung tissue distal to bronchial lesions, and provides a means of treating obstructive tracheal lesions heretofore considered insurmountable. Two methods in this immature surgical field have been used with gratifying success. The first is resection and anastomosis,[1] the second is plastic reconstruction with wire-supported dermal grafts.[2] The first method is useful for small localized lesions, and the second suitable for more extensive deformities.

The case described here afforded a severe test for tracheobronchial reconstruction. The relatively new surgical method used provided a solution to a clinical problem in which the distribution of healed lesions of tuberculous tracheobronchitis (which created the problem) was unique. In this case strangulating asphyxiation was gradually progressive for two years until finally an incredible degree of airway obstruction resulted that involved the thoracic trachea as well as both bronchi. Developing rapidly, a similar degree of obstruction of one main bronchus would have been serious; of both bronchi, probably disastrous; and of the trachea, surely fatal.

In this case a young woman was able to adapt her breathing to plugged, tortuous slits because the increment of airway obstruction from day to day was negligible, from week to week slight, and from month to month tolerable. Thus after two years breathing persisted through channels inadequate at more points than one. I feel that the fortunate ultimate result can be accredited to the remarkable adaptability of nature as much as to the surgical provision of an adequate airway.

REPORT OF A CASE

The patient was a woman, aged 30 years. A roentgenogram (fig. 1*A*) made in September, 1947, showed an atelectatic wedge in the right cardiophrenic angle. Active pulmonary tuberculosis, characterized by cough, noisy breathing, and positive sputum, however, was not diagnosed until January, 1949. On hospital admission in June, 1949, the chest roentgenogram also showed partial atelectasis of the upper lobe of the left lung (fig. 1*B*). Although this cleared rapidly, it indicated bronchial involvement on the left as surely as the basal atelectasis did on the right. Bronchoscopy revealed an extensive ulcerocaseous tracheitis that precluded further examination. Planigrams showed stenosis of the distal right bronchus, poor visualization of the left bronchus, and no significant tracheal deformity.

After streptomycin had been given for three months the acute symptoms subsided but a wheeze developed. In November, 1949, planigrams and bronchoscopy revealed beginning stenosis of the midtracheal third and the entire left main bronchus, in addition to almost complete occlusion of the right intermediate bronchus by a healed stenosis. Hyperemia and some exudate indicated residual inflammation. The left lung was clear; the upper lobe of the right lung still exhibited minimal infiltration. Three months later in February, 1950, it was impossible to pass a 6 mm. bronchoscope through the tracheal stenosis and hyperemia was still evident. The aerated lung fields were clear (fig. 1*C*). Planigrams showed an increase in the degree of tracheal and left bronchial stenoses. *p*-Aminosalicylic acid, which was given for three months was poorly tolerated. The tracheobronchial obstructive symptoms prevented physical activity. The sputum, while not voluminous or thick, was positive and the tubercle bacilli were only partially sensitive to streptomycin.

In July, 1950, one year after ulcerocaseous tracheitis was noted, bronchoscopy was done with a 5 mm. bronchoscope. Beginning 1½ in. (3.8 cm.) below the larynx, a marked, fairly well-healed stenosis of the trachea was observed to extend almost to the bifurcation. The lumen was about 2 by 4 mm. approximately 2 cm. above the carina. Just beyond a large upper lobe orifice, the distal right bronchus was represented by a healed, clean, "pinhole" stenosis. The orifice of the left main bronchus, which was an oval opening 6 by 3 mm., was not entered.

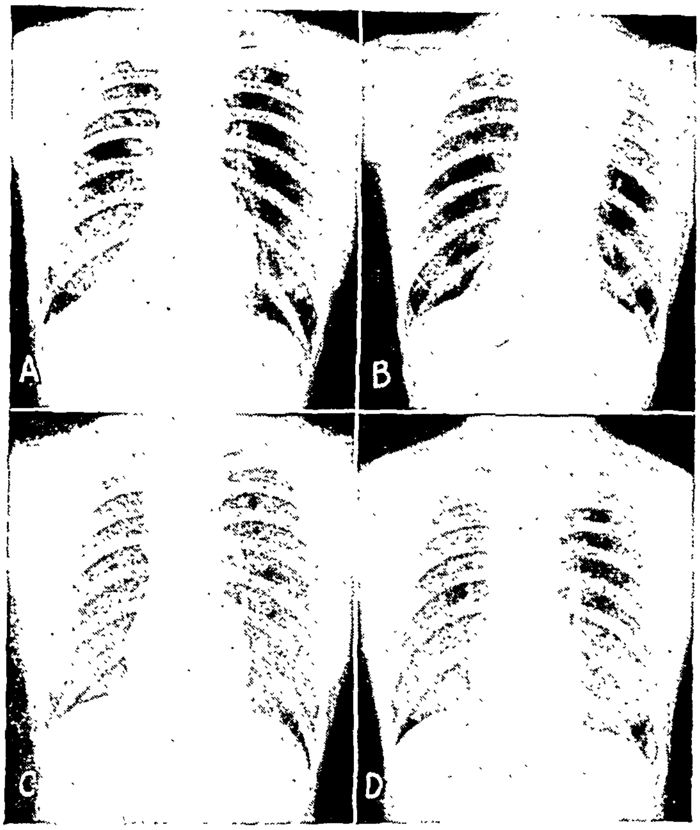

Fig. 1.—Preoperative roentgenograms. *A*, survey film made about two years before admission shows a dense wedge in the right cardiophrenic angle that represents the entire middle and lower lobes. *B*, admission chest film made in June, 1949. The basal wedge on the right has contracted; there is partial atelectasis in upper lobe of the left lung. Severe ulcerocaseous tuberculous tracheitis prevented adequate bronchoscopy. *C*, Roentgenogram made in January, 1950, three months after completion of a course of streptomycin. The aerated lung fields are clear, but bronchoscopy and planigrams revealed severe stenosis of the thoracic trachea and whole left bronchus, and occlusion of right bronchus below the upper lobe orifice. *D*, In November, 1950, the tracheal and left bronchial stenosis had increased. There is a questionable change at the left base. Tracheotomy was necessary five days later.

COMMENT

Following this examination, and again two months later, the possibility of surgical treatment evoked considerable discussion at a hospital staff conference. Operation in this patient was considered probably not feasible,

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From the Thoracic Surgical Service, Leahi Hospital.

[1] Gebauer, P. W.: (*a*) Reconstructive Surgery of the Trachea and Bronchi: Late Results with Dermal Grafts, J. Thoracic Surg. **22**: 568 (Dec.) 1951; (*b*) Pulmonary Surgical Salvage by Bronchial Resection, Surg., Gynec. & Obst. **94**: 347 (March) 1952.

[2] Footnote 1a. Gebauer, P. W.: (*a*) Plastic Reconstruction of Tuberculosis Bronchostenosis with Dermal Grafts, J. Thoracic Surg. **19**: 604 (April) 1950; (*b*) Further Experiences with Dermal Grafts for Healed Tuberculous Stenosis of the Bronchi and Trachea, ibid. **20**: 628 (Oct.) 1950; (*c*) The Use of Dermal Grafts for Tuberculous Stenosis of the Trachea and Bronchi, Hawaii M. J. **8**: 413 (July) 1949.

particularly because tracheal reconstruction had been successful in only one of four cases in our experience.[3]

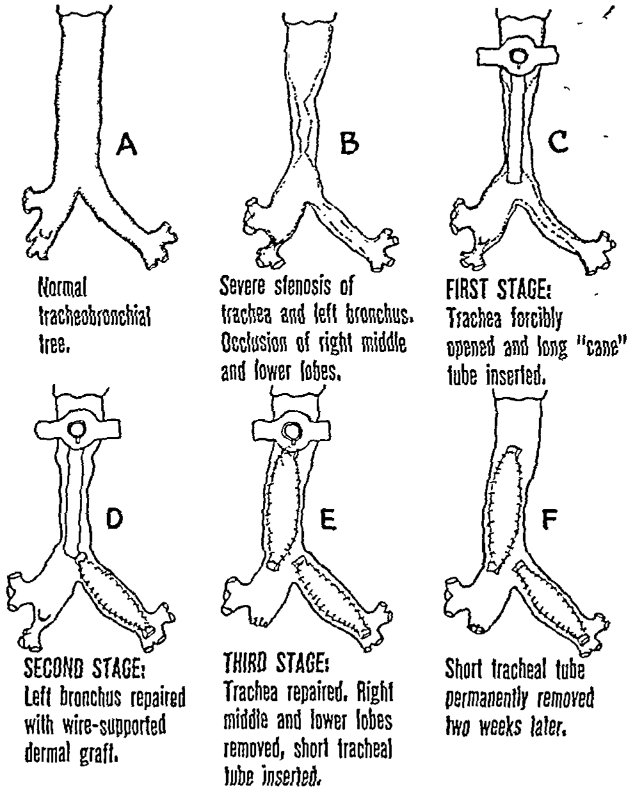
Left thoracotomy, with repair of the left bronchus to establish an adequate airway to the intact left lung, followed by right thoracotomy for repair of the trachea and removal of the destroyed middle and lower lobes of the right lung seemed an overwhelming undertaking even without the difficulties of oxygenation and anesthesia. Nevertheless, it seemed to be the only complete solution of the problem, and was preferable to certain asphyxiation. The decision was not to operate because of a possible spread at the left base that was probably an area of temporary atelectasis (fig. 1*D*), and partial resistance to streptomycin. Therefore, administration of as much *p*-aminosalicylic acid as could be tolerated was advised, and attempts at tracheal dilatation were considered.

On Nov. 13, 1950, bronchoscopy revealed that the tracheal stenosis was notably smaller, and the upper portion was dilated with difficulty. However, the lower portion, just above the carina, was rigid, and the lumen, 3 to 4 mm. in the anteroposterior diameter and 2 mm. wide, could not be enlarged. Because it was realized that the edema subsequent to this procedure would produce asphyxia, oxygen was administered and preparation made for tracheotomy.

Figure 2 depicts diagrammatically the procedures employed during the ensuing 10 weeks. A very low tracheotomy was done. The trachea was normal where it was incised, but below the suprasternal notch the stenosis barely admitted the tip of a small curved clamp. A tracheal dilator was worked into the lumen and forcibly spread open. This procedure permitted the insertion of a long, cane-shaped no. 4 tracheotomy tube, which, luckily, reached just beyond the stenosis. Also it undoubtedly produced a tracheal tear, for a mild subcutaneous emphysema and a small right pneumothorax were subsequently noted. An alarming asphyxial state was relieved temporarily.

The tracheotomy tube minimized the tracheal obstruction and permitted good aeration of the hyperdistended upper lobe in the right lung. However, the trauma of its insertion and its presence near the orifice of the stenotic left main bronchus evidently induced enough edema to make the slightest accumulation of secretions obstructive to the left lung, and thereby cause asphyxia. Repeated tracheal aspirations, administration of oxygen under pressure direct to the tracheotomy tube, and use of an oxygen tent only intermittently relieved dyspnea and cyanosis. Whenever the breath sounds became diminished or inaudible on the left, the patient's condition was extremely critical, but it improved when the usual harsh sounds were regained.

On the second night following tracheotomy, respirations ceased but recurred following intravenous administration of nikathemide (coramine®) and mouth to tube breathing. Severe generalized convulsions were controlled by intravenous administration of thiopental (pentothal®) sodium and phenobarbital (luminal®) sodium. Intense cyanosis was lessened by oxygen under pressure, applied during inspiration directly to the tracheotomy tube, from which bloody mucous was aspirated. On the following day there was a left-sided partial paresis and partial blindness that cleared following intravenous administration of procaine. On Nov. 15 the no. 4 tracheotomy tube was replaced with a no. 5 tube. However, fair aeration of the left lung could not be adequately maintained, and despite constant, heroic nursing, asphyxia and exhaustion seemed to be gaining the upper hand. Another crisis was passed on the next night. The patient returned to consciousness following the spraying of epinephrine into the tracheotomy tube in addition to the measures mentioned previously. This drug in aerosol was used intermittently thereafter with improved aeration of the left lung.



Normal tracheobronchial tree.

Severe stenosis of trachea and left bronchus. Occlusion of right middle and lower lobes.

FIRST STAGE: Trachea forcibly opened and long "cane" tube inserted.

SECOND STAGE: Left bronchus repaired with wire-supported dermal graft.

THIRD STAGE: Trachea repaired. Right middle and lower lobes removed, short tracheal tube inserted.

Short tracheal tube permanently removed two weeks later.

Fig. 2.—Drawings depicting tracheobronchial deformities present and procedures applied. The dermal grafts used to correct the deformities of the left bronchus and trachea were actually inserted in the posterior aspect of these structures, but are drawn on the anterior for increased clarity. *A*, normal structures for comparison. *B*, state of patient's tracheobronchial tree at least three years after acute tuberculous involvement of distal right bronchus, with destroyed middle and lower lobes, and one and one-half years after ulcerocaseous involvment of trachea and left bronchus. *C*, tracheal obstruction relieved by long, cane-shaped tracheotomy tube. There was extreme difficulty in maintaining aeration of the left lung at this stage. *D*, two weeks after tracheotomy. The left main bronchial stenosis was corrected with a dermal graft. *E*, seven weeks later. The middle and lower lobes of the right lung have been removed, the tracheal stenosis corrected with a second dermal graft, and the long tracheotomy tube replaced with a short one. *F*, short tracheotomy tube removed after two weeks.

A gradual improvement began. After a week the patient could tolerate short periods without oxygen, but she was able to get out of bed. In another week her breathing and general condition were better than before tracheotomy. Bronchoscopy showed no evidence of significant infection. For these reasons, and because it was considered important not to delay until the antibiotic control of infection became difficult, it was decided to attempt reconstruction of the left bronchus and provide an adequate airway to the good lung; then, the patient's condition permitting, reconstruction of the trachea and removal of the blocked middle and lower lobes would be undertaken.

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[3] (*a*) Footnote 2c. (*b*) Gebauer, P. W.: Experiences with Surgical Reconstruction of the Trachea, Am. Rev. Tuberc. 62: 176 (Aug.) 1950.

Two weeks after tracheotomy, posterior left thoracotomy was carried out. The tracheotomy tube was replaced with an intratracheal no. 26 French catheter. At the proper point it was fixed by a suture to the cervical skin. Anesthesia was supplied by cyclopropane, thiopental sodium, and ether with oxygen. The left lung did not deflate readily. The left bronchus consisted of a pencil-sized, long, fibrous cord. The membranous portion was contracted. It was incised longitudinally from the upper lobe orifice into the trachea well above the carina. This incision was a little over 3 in. (7.6 cm.) long. The bronchial lumen was 3 mm. at the carina, and less than this in the midbronchus. The inner surface was rather smooth, clear, glistening, and pale pink. The bronchial wall consisted of fibrous tissue from 2 to 4 mm. thick. Soon after the left chest was opened, the blood pressure was about 40 to 70 mm. Hg. The pulse ranged from 110 to 120. The patient's color and general condition were considerably improved whenever the left lung was inflated with oxygen applied to the open bronchus through the wound by means of sterile tubing leading from an oxygen tank.[3b]

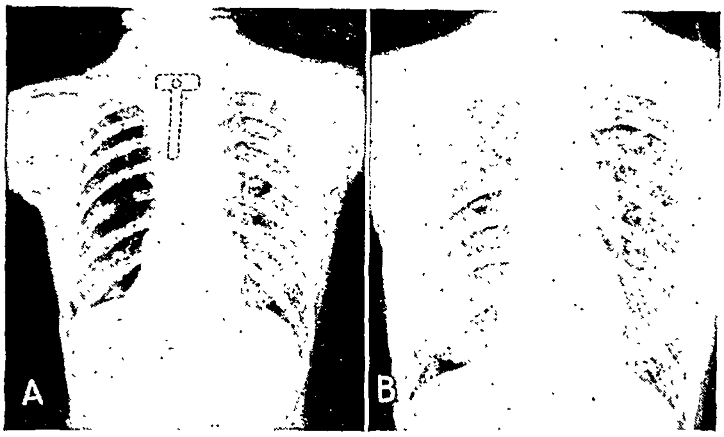

Fig. 3.—Roentgenograms of the chest. *A*, three weeks following left thoracotomy and dermal graft of left bronchus. The tracheotomy tube is outlined. *B*, six months after right thoracotomy, middle and lower lobectomy, and dermal graft of trachea.

As can be seen from the roentgenograms (fig. 1 and 3), the mediastinum was drawn well to the right by the complete atelectasis and shrinkage of the lower and middle lobes of the right lung. Exposure of the lower trachea and bifurcation from the left was difficult despite complete mobilization and retraction of the aortic arch, for most of the trachea was to the right of the vertebras.

According to a technique previously described,[3] a dermal graft, obtained from the thoracotomy incision, was made to fit the spread open bronchus and was laced with a 30 gage supporting wire. The graft, which was 3 in. (7.6 cm.) long and ¾ in. (1.9 cm.) wide, was sutured into the tracheobronchial incision. Exposure for the insertion of the tracheal sutures necessitated considerable traction on a large gauze tape encircling the left pulmonary hilus, which evidently occluded the left pulmonary veins, permitting both lobes to become suffused with blood and severely edematous. This was first discovered after the graft had been sutured into the trachea and proximal bronchus and the traction had been released, when bloody edema fluid welled from the bronchus. The patient's condition was poor. Much time was spent inflating the left lung with oxygen supplied through the open bronchus, followed by aspiration of a large amount of pink, frothy fluid. This was done many times. Gradually both lobes lost their ecchymotic appearance, and the patient's condition improved. The graft sutures were completed; the left lung inflated and deflated readily. The chest was closed with suction drainage, immediately applied. The long tracheotomy tube was replaced. The contemplated right thoracotomy could not be done because of the severe operative edema of the left lung. About an hour after operation the upper lobe of the right lung was dry and well aerated; the left lung was aerating, but extremely wet. The radial pulse was barely perceptible. The systolic blood pressure was about 60 mm. Hg, and cyanosis was marked. Oxygen under pressure was applied to the tracheotomy tube, which was repeatedly aspirated. Aminophylline was administered intravenously, and 300 cc. of blood was rapidly introduced into the right femoral artery. The systolic pressure immediately rose to 90 mm. Hg. The left pulmonary edema and cyanosis cleared. After 48 hours the left lung was dry and the breath sounds normal.

During the following week difficulty was encountered with crusting of dried secretions in the tracheal tube, distal trachea, and grafted left bronchus, which were removed by tracheal aspirations and bronchoscopy on the third postoperative day. The oxygen tent was kept dripping with moisture, there was no cyanosis, and after the eighth day the oxygen tent was no longer used. Three weeks after operation both lung fields were clear on roentgenograms (fig. 3*A*).

The tracheal tube was temporarily removed and bronchoscopy repeated 14, 26, and 42 days after operation. The grafted bronchus by this time was completely healed and lined with glistening mucosa, and the lumen admitted a 6 mm. scope beyond the upper lobe orifice of the left lung. While the tracheal bifurcation was clean, there was a gradual accumulation of granulation tissue just distal to the end of the tracheotomy tube, reducing the visible tracheal lumen to 4 mm.

Because of the long period of treatment contemplated, various combinations of antimicrobial drugs were changed every week or 10 days in an effort to prevent development of bacterial resistance. Smears of the tracheal secretions seldom revealed any organisms, but cultures occasionally showed various streptococci, and Saccharomyces became evident after courses of aureomycin.

Two months after tracheotomy the amount of infection present seemed to have little clinical significance. The graft appeared well healed; the patient's general condition was good; there was no evidence of infiltration in the left lung; and the upper lobe of the right lung remained stable. Because of beginning tracheal obstruction just beyond reach of the tracheotomy tube by granulation tissue and proliferative epithelium, tracheal repair and removal of the destroyed lower and middle lobes of the right lung seemed indicated.

Posterior right thoracotomy was done on Jan. 15, 1951, nine weeks after tracheotomy and seven weeks after reconstruction of the left bronchus. The patient's condition was good throughout. the operation. The trachea was a thick fibrous tube, so tightly stretched over the indwelling catheter that the latter was twice incised as the trachea was opened longitudinally along the posterolateral aspect from the origin of the right bronchus into the neck. The tracheal wall was somewhat irregular and about 3 to 4 mm. thick; no intact cartilages were encountered from the bifurcation to above the level of the first costal cartilage. The upper angle of the incision traversed two apparently normal cartilages. In a short time the incised edges of the scarred trachea retracted until half the circumference of the tracheal catheter was exposed, indicating that the actual inner circumference of the retracted trachea was about 15 mm. It was possible to inspect the inner surface of the previously inserted dermal graft in the lower trachea and proximal left bronchus, it was grossly indistinguishable from the adjacent tracheobronchial wall.

The suture fixing the tracheal catheter to the skin of the neck was cut by the anesthetist; the catheter was drawn down and inserted into the left bronchus. A large dermal graft was then fashioned and sutured into the trachea, except distally where the trachea was left open while the shrunken, atelectatic middle and lower lobes (fig. 4) were removed. Occlusive healed stenoses of the right intermediate and middle lobe bronchi were encountered. The tracheal catheter was pulled upward by the anesthetist from the left bronchus into the upper trachea. The tracheal graft was then moulded into a rounded contour over a large cervical dilator with a diameter of 12 mm., which was temporarily inserted into the tracheal lumen beneath the graft. The left bronchus was large enough to admit a dilator 10 mm. in diameter. The tracheal graft sutures were completed, and the chest closed with suction drainage. A short tracheotomy tube, which extended a little beyond the upper end of the graft, was inserted in the cervical tracheotomy.

The postoperative course was satisfactory. The distal end of the tracheotomy tube fitted into the tracheal lumen in the region of the upper end of the graft so snugly that it was still impossible for the patient to force air through the larynx with the tube in place. Beginning on the 10th day the tube was removed for gradually increasing periods and the tracheostomy in the neck plugged with the rubber bulb of an eye dropper. The patient was highly pleased to be able to speak after two months, but was much happier with her ability to breathe. The tube was removed permanently two weeks after operation but a residual cervical sinus was used occasionally for catheter aspiration of the trachea, for there was some difficulty in coughing up tenacious secretions. The sinus closed in a week, the coughing power increased and the secretions diminished. The patient had been ambulant after the first postoperative day and her general well-being improved rapidly.

While an active tuberculous focus was found in the removed middle lobe, all sputum cultures since operation have been negative for tubercle bacilli. The tracheal lumen now is of practically normal dimensions in the lower third. In the region of the upper end of the graft and the former site of the short tracheotomy tube it is irregular and about 7 mm. in diameter, although a scope with an external diameter of 12 mm. can be passed. There is not much sputum, but tenacious morning mucus is raised with some difficulty. Both lung fields were clear (fig. 3*B*) six months after tracheal repair. A mild, recurrent swelling of the left cervical lymph nodes is gradually subsiding, but delayed the patient's discharge from the hospital, nine months after tracheotomy.

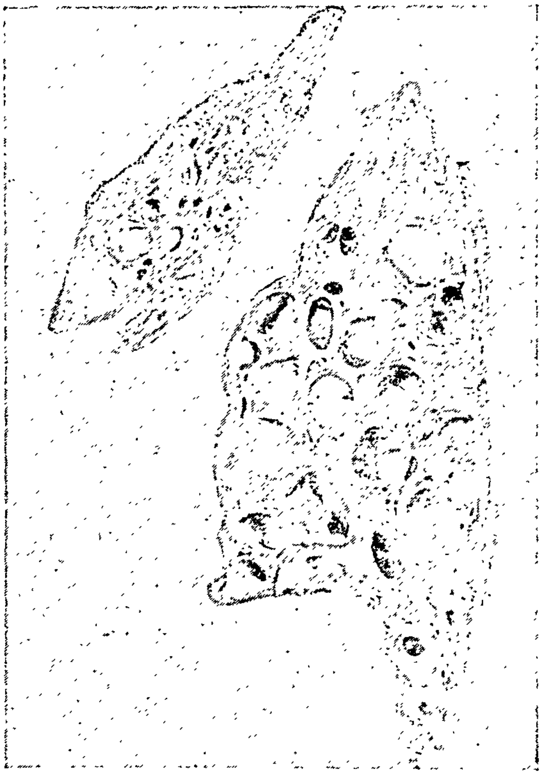

Fig. 4.—Sections of the removed middle and lower lobes show complete destruction by long-standing bronchial obstruction. An active caseous focus in the middle lobe was probably the source of positive sputum.

SUMMARY

A case of asphyxial tuberculous fibrostenosis of the trachea, left main bronchus, and right intermediate bronchus treated by tracheotomy, dermal graft of the stenosed left bronchus, and dermal graft of the trachea with excision of the middle and lower lobes of the right lung is reported. The feasibility of reconstructive surgical procedures on the tracheobronchial tree is demonstrated, and the value of wire-supported dermal grafts in this surgical field is established. This case report illustrates the need for a means of transthoracic oxygenation in extensive tracheobronchial procedures.

ADDENDUM

The patient described here is now at home, doing her work as a housewife. She was discharged from the hospital one year after her last operation.

649 Pokole St.

STREPTOCOCCUS VIRIDANS SUBACUTE BACTERIAL ENDOCARDITIS

TWO WEEK TREATMENT SCHEDULE WITH PENICILLIN

Morton Hamburger, M.D.
and
Leon Stein, M.D., Cincinnati

Eight years ago, when subacute bacterial endocarditis was first treated with penicillin, clinicians quickly learned that with the small amounts of penicillin employed relapse could be averted only by continuing therapy for many weeks. As penicillin has become more plentiful the average daily dose has been increased and the term of therapy generally fixed at four to eight weeks. Bloomfield [1] in a recent report suggests a 30 day treatment schedule, and Keefer and his associates [2] advise 8 weeks. In England, Christie [3] recommends 500,000 units a day for 28 days, with the expectation that infection will be eradicated in 90% of the patients. The chance observation, in 1946, that a patient who had failed to respond to conventional doses of penicillin administered for many weeks was cured in 11 days with a daily dose of 15 million units, led us to a systematic study of the possibility of reducing the treatment period in other patients. Since then, we have treated 12 patients infected with penicillin sensitive Streptococcus viridans with this dosage for two weeks or less, with very encouraging results. It is the purpose of this paper to report and discuss this experience.

MATERIAL AND METHODS

Eight patients were males, and four were females. Three were in the second decade of life, three in the third, one in the fourth, three in the fifth, and two in the sixth. There was considerable diversity of valvular involvement for such a small series: in two patients only the aortic valve was involved, in one, only the mitral valve, and in four others, the aortic and the mitral valves. In the remaining five patients, one or more congenital defects were present.

Crystalline sodium penicillin G was used in every case. Each dose was administered in a total volume of 5 cc. of distilled water, including 2 cc. of 1 or 2% procaine hydrochloride to alleviate discomfort. The procaine was added only a few moments before an injection was given, and the amount of penicillin it precipitated was negligible. Two million units were injected into the muscle of the buttock or thigh every three hours; later in the study, the dose was changed to 2,500,000 units every four hours. The first patients in this series were given penicillin by continuous intravenous drip at the rate of 15 or 16 million units a day, but this method proved to be dangerous and was technically more difficult than intramuscular injection at intervals.

Penicillin sensitivity of the infecting bacteria was determined by a twofold serial dilution test in heart infusion broth containing rabbit blood. This test has been previously described.[4] Penicillin blood levels of these patients were determined twice weekly by means of the twofold serial dilution Bacillus subtilis method of Randall, Price, and Welch.[5]

Cultures of valvular vegetations were obtained by the following method. The outside of the vegetation was seared with a hot spatula. A sterile Pasteur pipette was then plunged into the interior and material aspirated. This material was cultured in rabbit blood broth. In addition, a fragment of vegetation was washed in 20 rinses of sterile distilled water, after which it was placed in a mortar containing 2 cc. of broth and was ground with a pestle. A gram stain was made of the suspension, and cultures were prepared in both and in pour plates.

RESULTS

Some of the pertinent clinical data, including follow-up reports, are presented in table 1. Ten of the twelve patients treated for periods of 11 to 14 days are still living, giving a survival rate of 83.3% for this series. The two deaths (R. Wh. and H. L.) were due to cardiac failure and pulmonary infarction, respectively, one occurring two months and the other six months after cessation of treatment. In both these patients blood cultures had been persistently sterile, and cultures of the vegetations gave no growth. Necropsy revealed that grossly the vegetations had healed and that microscopically healing was complete in the patient who died six months after treatment and nearly complete in the patient who died two months after treatment. In both cases, gram stains of sections of the vegetation failed to reveal bacteria. Two patients (G. H. and M. C.) who are living and well had bacteriological relapses within a month after the first course of treatment but were successfully treated in a second two week course. These two patients have been free of infection for 38 and 8.5 months, respectively. The bacteriological relapse rate, therefore, was 16.7%.

From the Department of Medicine, University of Cincinnati College of Medicine, and Cincinnati General Hospital.

The crystalline sodium penicillin G used in this study was supplied by Dr. Augustus Gibson of Merck & Company, Inc.

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This material was presented in part at the Twenty-Third Annual Meeting of the Central Society for Clinical Research, Chicago, Nov. 3, 1950, and appeared in abstract form (J. Lab. & Clin. Med. 36: 831-832, 1950).

[1] Bloomfield, A. L.: The Present Status of Treatment of Subacute Bacterial Endocarditis, Circulation 2: 801, 1950.

[2] Keefer, C. S.; Anderson, D. G., and Hewitt, W. L.: End Results in the Treatment of Bacterial Endocarditis, Tr. A. Am. Physicians 61: 112, 1948.

[3] Christie, R. V.: Penicillin in Subacute Bacterial Endocarditis: Report to the Medical Research Council on 269 Patients Treated in 14 Centres Appointed by the Penicillin Clinical Trials Committee, Brit. M. J. 1: 1, 1948.

[4] Hamburger, M., and Muething, D.: The In Vitro Sensitivity to 8 Antibiotics of Streptococci and Staphylococci Recovered from Cases of Bacterial Endocarditis, J. Lab. & Clin. Med. 37: 60, 1951.

[5] Randall, W. A.; Price, C. W., and Welch, H.: The Estimation of Penicillin in Body Fluids, Science 101: 365, 1945.

The follow-up periods on the "cured" patients vary from eight and one-half months to nearly four years. Only 2 of these 10 patients are not leading essentially normal lives. One of the two (G. H.) has advanced cerebral deterioration with hemiplegia. The other (H. O.) is disabled by the cardiac and cerebral symptoms that accompany severe aortic stenosis and, consequently, has been unable to work for more than a few weeks at a time. The remaining eight patients, although advised to avoid strenuous physical activity, have resumed the schooling or occupation they pursued prior to the onset of bacterial endocarditis. One of the eight (R. W.) is in a state bordering upon chronic failure and requires digitalis and weekly administration of mercurial diuretics to remain symptom-free; nevertheless, he insists upon earning his living in a relatively strenuous occupation. The other seven require no therapy for cardiac disease.

Penicillin sensitivity of infecting streptococci is indicated in table 2. The minimal inhibiting concentration of penicillin for 9 of the 12 strains was 0.06 units (0.036 μg) or less per cubic centimeter of medium; two strains required 0.1 unit (0.06 μg) and 1 strain required 0.2 unit (0.12 μg) per cubic centimeter of medium. Penicillin blood levels were assayed in most of the patients at three to five day intervals. In some instances paired blood samples were drawn, the first just prior to an injection of penicillin and the second 45 to 60 minutes after the injection. The peak levels varied from 3.12 units to 25 units of penicillin per cubic centimeter of blood. The median level of 61 determinations was 12.5 units (7.5 μg) per cubic centimeter of blood. In general, the levels 45 to 60 minutes after a dose were two to four times higher than those just prior to a dose.

Symptoms were present from four weeks to nine months prior to the two week course of penicillin therapy. Paradoxically, the patient who was treated earliest (R. Wh.) died of cardiac failure, even though he was cured bacteriologically. In the two cases in which bacteriological relapse occurred after the first course of treatment, symptoms had been present for three and four months respectively. Two patients (M. R. and H. O.) had received varying amounts of penicillin prior to their final, successful treatment. In this small series, therefore, no correlation was observed between duration of symptoms and clinical or bacteriological recovery from subacute bacterial endocarditis.

TABLE 1.—*Summary of Data on Twelve Patients with Subacute Bacterial Endocarditis Treated with Two Week Course of Penicillin*

								Follow-Up	
Patient	Age	Sex	Race	Duration of Treatment, Days	Route	Duration of Symptoms Prior to Therapy	Valvular Diagnosis	Months After Treatment	Status of Patient
M. R.	27	F	W	11	IV	9 mo.	Mitral stenosis and insufficiency; aortic insufficiency	47	Works 8 hr. a day as teletype operator; no symptoms or signs of cardiac failure
G. H.	39	M	W	28 *	IV	4 mo.	Mitral stenosis and insufficiency; aortic insufficiency	38	Hemiplegia, permanent invalid; no symptoms or signs of cardiac failure
L. F.	56	F	N	14	IV	6 wk.	Mitral stenosis and insufficiency	34	Works as housewife and seamstress; no symptoms or signs of cardiac failure
W. P.	21	M	N	14	IM	4 wk.	Aortic stenosis and insufficiency; mitral insufficiency	22	Works as truck driver; no symptoms or signs of cardiac failure
H. N.	57	M	W	14	IM	3 mo.	Mitral stenosis and insufficiency; aortic insufficiency	20	Works in clerical job 8 hr. a day; no symptoms or signs of cardiac failure
F. B.	21	M	N	14	IM	4 mo.	Patent ductus arteriosus	20	Works as bus boy in hospital kitchen; no symptoms or signs of cardiac failure
H. O.	42	M	W	14	IM	7 mo.	Advanced aortic stenosis; aortic insufficiency	20	Obtains occasional sedentary employment; paroxysmal nocturnal dyspnea
M. J. W.	13	F	N	14	IM	3 mo.	Patent septum ventriculorum	13	Attends junior high school; no symptoms or signs of cardiac failure
R. W.	43	M	N	14	IM	4 mo.	Aortic insufficiency	11	Washes cars in filling station; takes digitalis daily and meralluride injection (mercuhydrin sodium solution) weekly, and goes into failure if these are omitted
M O.	13	F	N	28 *	IM	8 mo.	Auricular septal defect, proved by cardiac catheterization	8.5	Attends school; no symptoms or signs of cardiac failure
R. Wh.	15	M	W	14	IM	4 wk.	Patent ductus arteriosus; interventricular septal defect; coarctation of aorta	2	Died of severe congestive heart failure. Endocarditis grossly and microscopically healing at time of death; gram stain negative; culture sterile
H. L.	47	M	W	14	IM	2 mo.	Bicuspid aortic valve	6	Died of multiple pulmonary infarcts. Endocarditis grossly and microscopically healed; gram stain negative; cultures sterile

* Two 14 day courses given.

The following two cases are representative of this series.

REPORT OF CASES

CASE 1.—Patient M. R., a 27-year-old, single, white woman, was admitted to the Holmes Hospital on June 29, 1947. At the age of 9 she had had acute rheumatic fever. At 15 she was told that she had a heart murmur, although she had never suffered symptoms of cardiac disability. Otherwise she had been in good health until November, 1946, when she began to notice that she tired easily. Later that month her gums bled. She consulted a dentist, who treated the gums but removed no teeth. She continued to work until January, 1948, when she was admitted to the Middletown Hospital, where the diagnosis of subacute bacterial endocarditis was made. She received 40,000 units of penicillin every three hours for 10 days and returned home after 2 weeks, but within a month she began to have low grade fever, chilly sensations, and night sweats. She returned to the same hospital in March and remained until May 11, receiving 100,000 units of penicillin every three hours for 68 days. With this regimen she improved. She returned to work half-time but still did not feel entirely well. On June 24, she had an attack of severe pain in the right hip, which was aggravated by motion. It was this symptom and the failure of previous penicillin therapy to return her to good health that led to her referral to Holmes Hospital.

Her physical examination on admission to the hospital disclosed a temperature of 100.6 F, a pulse rate of 110, a respiratory rate of 20, and blood pressure of 120/68 mm. Hg. She was very thin. She had no respiratory distress but complained of pain in the right hip. There were no eruptions or petechiae, the optic fundi were normal, the lungs were clear, and the heart was not enlarged to percussion. There was a systolic thrill over the apex of the heart in the fifth left interspace. The heart sounds were clear. There was a loud, harsh systolic murmur at the apex transmitted over the entire precordium to the axilla. No diastolic murmurs were heard. P_2 was greater than A_2. The abdomen was normal, and the spleen was not palpable. The fingernails were distinctly curved. There was tenderness over the right hip, with marked limitation of movement at this joint. The white blood cell count was 10,100, with 75% polymorphonuclear leukocytes, 24% lymphocytes, and 1% monocytes. The red blood cell count was 2,710,000. The hemoglobin was 9.9 gm. per 100 cc. A catheterized urine specimen had a specific gravity of 1.009, a faint trace of albumin, and 4 to 5 white cells, along with many red blood cells per high power field. Three successive blood cultures were positive for alpha Streptococcus, with 45 colonies per cubic centimeter. The inhibiting concentration of penicillin for this organism proved to be 0.03 units (0.018 μg) per cubic centimeter of medium.

TABLE 2.—*In Vitro Sensitivity to Penicillin of Str. Viridans from Twelve Patients*

Minimal Inhibiting Concentration of Penicillin		No. of Cases
Units per Cc.	μg per Cc.	
0.012 (or less)	0.007 (or less)	5
0.03	0.018	2
0.05	0.03	1
0.06	0.036	1
0.1	0.06	2
0.2	0.12	1
	Total	12

A diagnosis of subacute bacterial endocarditis in relapse was made. The subsequent hospital course is shown in figure 1. On the third hospital day intravenous administration of crystalline sodium penicillin G, at the rate of 16 million units per day, was begun. By the seventh day the patient's temperature was normal, and she felt and looked better; however, by the 12th day her temperature had risen to 104 F, although blood cultures taken with adequate amounts of penicillinase in the medium remained sterile. An urticarial rash appeared, and a severe shaking chill followed. Chills continued daily. The rash became morbilliform and then purpuric, covering wide areas of the body. The patient's temperature remained elevated. On the 14th day she became apathetic and mentally confused and lost control of her sphincters. These signs and symptoms were interpreted as manifestations of a penicillin reaction, and, consequently, administration of penicillin was discontinued on the 14th day. Within 12 hours the temperature dropped to normal and remained so thereafter. The patient improved rapidly.

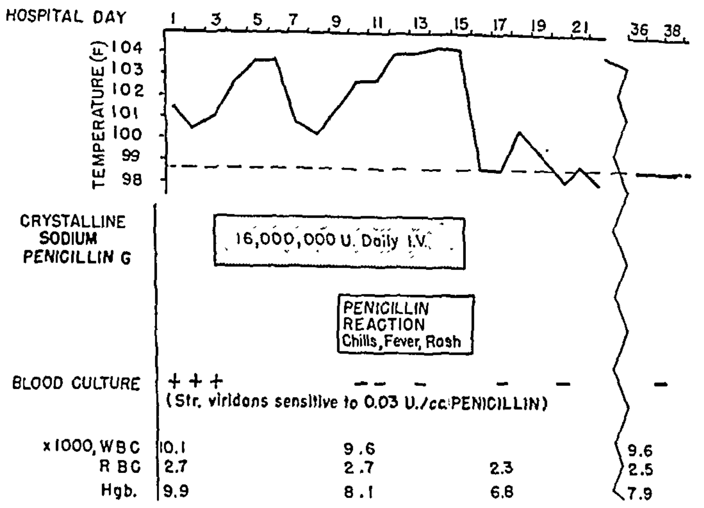

Fig. 1.—Course of patient M. R. (table 1), who was given an 11 day intensive penicillin treatment schedule.

Thirteen days after the discontinuance of penicillin therapy, a short aortic diastolic murmur was heard for the first time. The next day, while sitting up in bed, the patient was suddenly seized with headache on the left side, difficulty in speech, and tingling and numbness in the right hand. Neurological examination revealed weakness of the right lower facial muscles, speech difficulty, weakness of grip in the right hand, and clonus of the right foot. Reflexes in the arms and legs on the right side were all hyperactive, and the Babinski reflex on the right side was positive. On the left side all reflexes were normal. Daily blood cultures taken during this time were sterile. A diagnosis of cerebral embolism was made. The neurological signs and symptoms gradually improved and within 10 days had disappeared entirely. The episode was regarded as an example of sterile embolism from a valvular vegetation occurring before complete healing had taken place.

The anemia, which had not improved during treatment, gradually corrected itself over the next month without special therapy. The patient has been followed for four years, during which time she has been entirely well. She works eight hours a day as a teletype operator, has been married for more than a year, and has suffered no symptoms of cardiac disability.

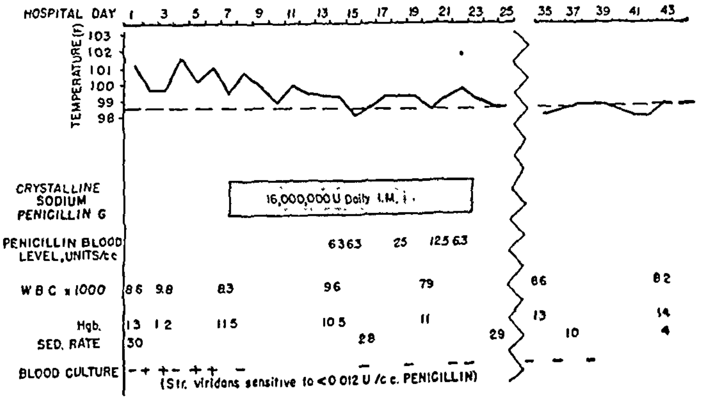

Fig. 2.—Course of patient H. N. (table 1), who was given a 14 day intensive penicillin treatment schedule.

CASE 2.—H. N., a 57-year-old white man, was admitted to the Cincinnati General Hospital on Aug. 31, 1949, complaining of fever of two and one-half months' duration. During the previous year he had noted progressive fatigability, without weight loss. He had suffered no symptoms severe enough to cause him to seek medical assistance until June 17, when headache and a temperature of 102 F caused him to go to his physician. He was given an injection of penicillin for "virus infection." He received two more injections of penicillin and, a little later, 32 capsules of aureomycin. He was finally admitted to a hospital because of continuing weakness, fever, and chilly sensations. There he was given streptomycin, 1 gm. twice a day, for 29 days. During this period tenderness appeared in the tips of some of his fingers, and a heart murmur was noticed. A consultant made the diagnosis of subacute bacterial endocarditis. He was transferred to the Cincinnati General Hospital for treatment.

He had had rheumatic fever at the age of 8. At initial physical examination, his temperature was 99 F, pulse rate 76, respiratory rate 24, and blood pressure 110/60 mm. Hg. He appeared to be chronically ill and was slightly pale but was in no distress. Several small petechial lesions were noted on the trunk and legs. His teeth were in poor condition. His heart showed the physical signs of mitral stenosis and insufficiency and early aortic insufficiency. The spleen was palpable at one fingerbreadth below the costal margin. There was early clubbing of the fingers. Laboratory tests showed the red blood cell count to be 4,500,000, the hemoglobin 13 gm. per 100 cc., the white blood cell count 8,600, with 74% neutrophils, 20% lymphocytes, and 6% monocytes. The urine was clear and contained no albumin; microscopic examination revealed 1 to 3 white blood cells and 3 to 6 red blood cells per high power field. A blood culture made on the day of admission was negative. However, four of seven daily cultures were positive for Str. viridans. The minimal inhibiting concentration of penicillin for this microorganism was less than 0.012 units (0.007 μg) per cubic centimeter of medium; that of aureomycin was 0.025 μg per cubic centimeter; and that of streptomycin was greater than 1,250 μg per cubic centimeter. Whether the microorganism was originally resistant to streptomycin or whether resistance developed during the earlier streptomycin treatment is not known. The penicillin blood level, measured approximately twice weekly, varied between 6.3 and 25 units per cubic centimeter of blood.

The hospital course for this patient is shown in figure 2. During the first week in the hospital, his temperature fluctuated between 99.4 F and 102 F. On Sept. 8, the administration of crystalline sodium penicillin G was begun, at the rate of 16 million units every three hours injected intramuscularly; this was continued for two weeks. The temperature receded gradually to normal, and after the fifth day of treatment it did not exceed 99.6 F. Blood cultures became negative and have remained so for 22 months. The patient gradually regained his strength and returned to work after about four months' uneventful convalescence. He has remained in good health ever since, with no evidence of cardiac failure.

COMMENT

The results obtained in this series of patients show that the valvular vegetations of subacute bacterial endocarditis can be sterilized by a two week course of intensive penicillin therapy. Though the relapse rate of 16.7% is no lower than that achieved by longer dosage schedules, the practical and economic value of a two to six week reduction in hospitalization is obvious. Penicillin is now relatively inexpensive. The death rate of 16.7% is perhaps lower than that usually reported. Since our experience in these 12 cases is statistically too limited to permit our drawing conclusions as to the practicality of wide application of this method, our purpose in reporting these cases is to stimulate further investigation of shorter dosage schedules. It is possible that the combination of penicillin with streptomycin, as suggested by Hunter,[6] or with one of the newer antibiotics may still further reduce the relapse rate.

It is emphasized that in all patients in this series the disease was caused by penicillin sensitive streptococci. Bacteriological cures were not obtained in two cases of endocarditis caused by Str. fecalis, for which the minimal inhibiting concentration of penicillin was 6.25 units (3.75 μg) per cubic centimeter of medium.

The intramuscular route of administration proved most practical and safest. Small sterile nodules appeared in the muscles of several patients during treatment, but these disappeared within a few weeks and caused minimum discomfort. Two patients died during intravenous administration, one during the first six hours and the other on the third day of treatment. They are not included in this series, because they did not complete the projected course of treatment.

SUMMARY

The results of a two week penicillin treatment schedule for subacute bacterial endocarditis caused by penicillin sensitive streptococci are reported. Treatment consisted of daily administration of 15 or 16 million units of penicillin given intravenously to the first few patients and intramuscularly to the others. Of 12 patients treated, 10 are still living, 8.5 to 47 months after cessation of treatment. Two patients died of cardiac failure and pulmonary infarction, respectively; however, postmortem cultures and microscopic examination of the valvular vegetations of these patients indicated that bacteriological cure had been effected. Two patients had relapses within a month after treatment and were successfully treated with a second two week course.

Of the 10 living patients, 8 are in school or are pursuing the occupations at which they were employed prior to their infection. Only one of the eight requires digitalis and mercurial diuretics. Of the two patients not leading essentially normal lives, one is invalided by hemiplegia, and the other suffers from the cerebral and cardiac symptoms of advanced aortic stenosis.

It is hoped that this report of the results obtained in a small series of patients will stimulate further investigation of shorter treatment schedules for this disease.

ADDENDUM

In a further follow-up of the 10 living patients, 8 months after the manuscript was prepared, it was found that all are alive and, with one exception, in the same condition as reported in table 1; patient R. W., though ambulatory, is in chronic congestive heart failure.

[6] Hunter, T. H.: Speculations on the Mechanism of the Cure of Bacterial Endocarditis, J. A. M. A. 144: 524 (Oct. 14) 1950.

Production of Antibiotics.—The ability to produce antibiotics is widely distributed among microorganisms. However, it is not a generic or even a specific characteristic, but is limited to certain strains within a given species. The variation in the production of antibiotics is both quantitative and qualitative. Strains of *Penicillium notatum* and of *P. chrysogenum* vary in their capacity to form penicillin between less than 1 unit and more than 1,000 units per 1 ml. of culture medium. The composition of medium and the conditions of cultivation greatly influence the amount and even the nature of the penicillin produced. Various strains of *S. griseus* differ greatly in their ability to form streptomycin: some give rise also to other antibiotics, such as actidione and streptomycin; some form no streptomycin, but only other antibiotics; whereas some form no antibiotics at all. The problem is thus not only to find a given organism which forms a certain antibiotic, but also to find one that produces the particular antibiotic in sufficient concentrations to justify its practical manufacture.—Selman A. Waksman, Ph.D., Frontiers in Medicine, The March of Medicine, 1950, New York, Columbia University Press, 1951, page 110.

J.A.M.A., June 7, 1952

ACUTE ANICTERIC VIRUS HEPATITIS

REPORT OF THIRTY CASES

Herman C. B. Denber, M.D.
and
Sidney Leibowitz, M.D., New York

Studies of acute virus hepatitis, including epidemics of the recent war, contain relatively scant reference to the less severe, coexisting form in which jaundice is lacking.[1] Although it was realized many years ago that jaundice was not necessary for the diagnosis of hepatitis,[2] early descriptions of epidemics of infectious hepatitis ("catarrhal jaundice") did not mention the anicteric form.[3] Within recent years there has been increasing awareness of the existence of the anicteric variety [4] and of its morbidity and occasional tendency to chronicity.[5] Some writers [6] describe fatalities with subacute necrosis of the liver, without jaundice, which they attribute to a preceding acute anicteric virus hepatitis; but this causal relationship has not been demonstrated beyond question.

The few reports devoted to the subject of acute anicteric virus hepatitis have apparently not succeeded in achieving wide recognition of its clinical importance. This study, based on 30 sporadic cases, is being presented to underscore the importance of the nonjaundiced form of acute virus hepatitis and to emphasize the clinical and laboratory features that suggest its diagnosis.

MATERIALS AND METHODS

The series consists of 30 sporadic cases of acute anicteric virus hepatitis first observed in the one and one-half year period from June, 1948, to December, 1949. Six of the patients were professional and nonprofessional employees of the hospital, seen first in the personnel health clinic; three of the patients were observed on the wards of the medical service; one patient was seen on the pediatric ward, and 20 were private patients. Twenty-seven patients were confined to bed during their illness, 14 in the hospital, and 13 at home; the remaining three patients were ambulatory throughout the illness and continued at their work. All patients were given a diet high in calories, protein, and carbohydrate and relatively low in fat, plus supplementary B-complex vitamins orally. Two patients received chloramphenicol orally; one patient received aureomycin orally; one patient received penicillin parenterally; and one patient received sulfonamides orally.

All patients with visible jaundice were excluded from this study. In addition, in an effort to eliminate the subicteric patient (as distinguished from the nonicteric patient [12]), those with a total serum bilirubin value exceeding 2.0 mg. per 100 cc. were also excluded despite the absence of clinical jaundice. It is obvious that this arbitrary selection of 2.0 mg. per 100 cc. as a dividing line is subject to the criticism that subicteric cases are thereby still admissible. However, as will be seen later, only seven cases of the entire group fall into this possible subicteric classification and in all other respects are comparable to the nonicteric group. Particular attention was also directed to eliminate cases of acute hepatitis due to other virus diseases, such as virus pneumonia and infectious mononucleosis, and to amebic infection.

Blood chemical determinations consisted of the thymol turbidity test in 30 cases (method of MacLagan [7] as modified by Shank and Hoagland [8]; maximum normal 4 units); cephalin-cholesterol flocculation in 29 cases (method of Hanger [9]; maximum normal 2+ in 48 hours); and total serum bilirubin in 28 cases (method of Malloy and Evelyn [10]; maximum normal 1.2 mg. per 100 cc.). The thymol turbidity and cephalin-cholesterol flocculation tests were utilized in this study because of their relatively simple performance, the general consensus that aberrations in results of these two tests reflect disturbance in the liver parenchyma, and the early appearance of abnormalities in one or the other test in virus hepatitis.

Table 1.—*Age and Sex Distribution of Thirty Patients*

Decade	Sex M	Sex F	Total
0- 9	0	1	1
10-19	1	0	1
20-29	5	12	17
30-39	1	7	8
40-49	2	0	2
50-59	0	0	0
60-69	1	0	1
70-79	0	0	0
	10	20	30

Table 2.—*Distribution of Occupations of Thirty Patients*

Occupation	No.	Occupation	No.
Nurse	6	Photographer	1
Housewife	6	Secretary	1
Salesman	3	Student	3
Physician	2	Social worker	1
Technician	3	Presser	1
Teacher	2	None (infant)	1

At least one white blood cell count was determined at the time of initial examination in 25 cases. The peripheral blood smear was examined in 26 cases. The heterophil antibodies were repeatedly determined in 28 patients by the method of Davidsohn.[11] Absorptions with guinea pig kidney and beef cell antigens were done in 11 of these patients.

RESULTS

The group of 30 included twice as many female as male subjects (table 1). Their ages varied from 2½ to 69 years. The age distribution by decades is listed in table 1. Most of the patients (83%) ranged between the ages of 20 and 39. They were widely distributed among the various occupational groups (table 2). Twelve of the entire group (40%) were engaged in hospital work as physician, nurse, technician, or secretary.

The frequency of occurrence of leading symptoms is listed in table 3. Persistent fatigue represented the outstanding complaint, being present in 26 cases (86%). Anorexia was the next most prominent complaint, being noted in 22 patients (73%). A distaste for smoking was remarked on in 16 of 22 smokers in the entire group (72%). The other frequently occurring symptoms were abdominal pains, headache, and nausea. Less commonly

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Dr. Denber is now Resident in Psychiatry, Manhattan State Hospital, Wards Island, N. Y.

From the Personnel Health Clinic, the Medical Service, and the Laboratories, Beth Israel Hospital.

The bibliographic references have been omitted from The Journal because of lack of space; they will, however, appear in the authors' reprints.

Mr. Walter Greenfield, Miss Pearl Glantz, and Miss Virginia Rechnitzer gave technical assistance. Drs. H. Bakst, P. Cohen, J. R. Dordick, M. D. Feltenstein, M. L. Kramer, J. Litwins, A. Silver, and G. Zucker gave permission for study of their patients.

encountered were soreness of the throat, chills, diarrhea, vomiting, and cough.

The outstanding findings on physical examinations are listed in table 4. The liver was palpably enlarged in 56% of the cases. Liver area tenderness was more frequent (79%). The liver was both palpable and tender in 51% of the patients and neither palpable nor tender in 16%.

The spleen was palpable in 27% of the cases, approximately half as frequently as was the liver. The spleen was considered tender infrequently (6%). Lymph nodes, mainly of the posterior cervical chain, were enlarged in 56% of the cases. In approximately half of these cases generalized lymphadenopathy was observed (inguinal, axillary, and epitrochlear).

On the initial physical examination, temperatures varying from 100 to 104 F were noted in 14 cases (46%). The pharynx appeared inflamed in seven (23%) cases, and an exanthem was noted in a similar number of cases. The rash was macular, maculopapular, or urticarial.

In 25 cases the white blood cell count was determined, and in 26 cases the peripheral blood smear was examined at the time of the initial physical examination. The initial counts ranged from 5,600 to 15,800. In seven cases the counts exceeded 10,000 cells per cubic millimeter. In 5 of the 26 cases a lymphocyte count in excess of 40% was found. These values were 70%, 64%, 58%, 50%, and 48%, respectively. Abnormal lymphocytes ("virocytes") [12] were noted in the peripheral blood at least on one occasion in each of 16 out of 26 cases (62%). In none of the cases did these cells exceed 10% of the differential count, and in most of the cases they were fewer than 5%. These were identical with the abnormal lymphocytes described in infectious mononucleosis and a number of other diseases, mostly of viral origin. [12]

TABLE 3.—*Frequency of Occurrence of Outstanding Symptoms in Thirty Cases*

Symptom	No. of Cases	%
Fatigue	26	86
Anorexia	22	73
Distaste for smoking	16 *	72
Abdominal cramps	19	63
Headache	18	60
Nausea	15	50
Sore throat	10	33
Chills	8	26
Diarrhea	7	23
Vomiting	5	16
Cough	4	13

* Twenty-two of the 30 patients were smokers.

The blood chemical determinations are summarized in table 5, in terms of range of deviations from the normal and percentages of the entire group showing abnormal readings. In 100% of the 30 patients the thymol turbidity tests yielded abnormal readings, varying from 5 to 21 units. The cephalin-cholesterol flocculation tests were abnormal in 25 of the 29 patients tested (86%). The total serum bilirubin value was within normal limits in 75% of the 28 patients examined. In seven (25%) patients the determination at some time during the illness was above 1.2 mg. per 100 cc.; the range of these seven values was between 1.4 and 1.9 mg. per 100 cc.

The data with respect to forms of therapy are insufficient to permit any valid conclusions. There were no fatalities. The 14 hospitalized patients averaged 19 days in the hospital, the range being 6 to 53 days. The figure of 53 days for one patient includes a second hospitalization period of 42 days, necessitated by a relapse two weeks after her initial discharge from the hospital. In only one case was complete symptomatic recovery not achieved after four months; this case may therefore be classified, according to Capps,[13] as a chronic active case. The disease in this patient, a 31-year-old woman whose initial acute hepatitis was probably of the SH variety,[14] was still active (both symptomatically and by laboratory tests) one year after the onset of illness. The 13 patients who were treated at home were confined for a considerably shorter average period than were the hospitalized patients, but exact figures on this are not available. All recovered completely within a period varying from 10 days to four months with the exception of the one chronic active case mentioned above. The three patients who remained at work throughout their illnesses required two and a half, three, and three months, respectively, to recover completely as judged clinically and by laboratory examinations.

TABLE 4.—*Incidence of Outstanding Signs Noted in Thirty Cases*

Sign	No. of Cases	%
Liver		
Tender	23	79 *
Palpable	17	56
Palpable, tender	15	51 *
Not palpable, not tender	5	16
Spleen		
Palpable	8	27
Tender	2	6 *
Lymph nodes		
Palpable	17	56
Fever (100-104 F)	14	46
Inflamed throat	7	23
Rash	7	23

* Undetermined in one infant.

In the 28 patients in whom heterophil antibody titers were determined, six (22%) revealed titers above the accepted normal of 1: 56 [15] as follows: four with a titer of 1: 112 and two with a titer of 1: 224. As reported elsewhere in detail (patients 4, 5, 6, 8, 11, and 13 in the article by Leibowitz [15]) these antibodies appeared to be normal (Forssman) in type when absorbed with guinea pig kidney and beef cell antigen suspensions.

TABLE 5.—*Summary of Maximum Readings in Blood Chemical Determinations in Thirty Patients*

Test	Maximum Normal Value	No. of Patients Examined	Deviation from Normal		
			No. of Patients	%	Range
Thymol turbidity	4.0 units	30	30	100	5-21 units
Cephalin-cholesterol flocculation (at 48 hr.)	2+	29	25*	86	3+-4+
Bilirubin (mg./100 cc.)	1.2 mg./100 cc.	28	7	25	1.4-1.9 mg./100 cc.

COMMENT

Although the onset of acute anicteric hepatitis may be protean, at times masquerading as pneumonia, meningitis, appendicitis, or other acute surgical or gynecological abdominal conditions,[1j,n] in our patients there was a more or less consistent presentation of certain complaints. Continuous fatigue ("I walk around with a weight on my shoulders"), loss of appetite, abrupt distaste for smoking, headache, abdominal pains, and nausea were the most frequent symptoms noted. These complaints should make one attentive to the liver as the possible site of the disease. Abrupt distaste for smoking was a valuable diagnostic symptom in 72% of the 22 smokers in our series, confirming the value of this recently reported observation.[16]

Except for this last observation other authors have described more or less similar symptoms. Finks and Blumberg [1q] found that anorexia was an early and constant symptom with or without nausea and vomiting. They stated that vague gastrointestinal complaints with fatigue and lassitude were frequent. Zimmerman, Lowry, Uyeyama, and Reiser [1z] noted malaise, anorexia, epigastric fulness, and pain in the right upper abdominal quadrant. Zimmerman and Thomas [4a] mentioned anorexia, epigastric fulness, and ache in their nine cases; headache and chilly sensations were noted in six. Capps, Sborov, and Scheifley [17] were impressed with a history of fatigue, intolerance to fatty foods, anorexia, flatulence, and loose stools. Some of their patients had nausea and vomiting, aching in the right upper abdominal quadrant, somnolence, and urticaria. Fritschy and Stäubli,[4b] in a study of 38 cases of anicteric hepatitis, emphasized fever, headache, and upper abdominal pain as being most constant symptoms, while severe fatigue, anorexia, vomiting, and rash were not necessarily present. Stahl, Levy, and Meschenmoser,[4d] in a report of seven cases, noted vague gastrointestinal complaints, epigastric fulness, anorexia, nausea, headache, and pain over the area of the liver.

The presence of a palpable and/or tender liver is considered by some to be essential for the diagnosis of hepatitis.[1r] On the other hand, anicteric hepatitis has been reported without liver enlargement or tenderness.[4c,d] Five of our patients did not have a tender or palpable liver in repeated examinations. Nonetheless, they satisfied the clinical and laboratory criteria for the diagnosis of anicteric hepatitis. One patient had the highest thymol turbidity in the series (21 units as a peak value). A question naturally arises: Can disease of an organ, as indicated by clinical symptoms and seemingly proved by laboratory examinations, exist without physical signs referable to that organ? These five cases indicate that such may be the case. The histological changes are apparently sufficient to produce alterations in function (as reflected in the laboratory tests) without gross organ changes such as liver enlargement or tenderness. It is not likely that such gross physical changes would be so transient as to recede between the time of examinations.

As an aid to diagnosis, the thymol turbidity test in this series was a somewhat more sensitive initial indicator of hepatic dysfunction than the cephalin-cholesterol flocculation test. The former was positive at the initial examination in 93% of the cases, while the latter was positive in 73%. On repeated determinations the result of the thymol turbidity test was positive in all patients, and the result of the cephalin-cholesterol flocculation test was positive in 86%.

The most important factor in making the diagnosis of acute anicteric virus hepatitis probably is an awareness of its possible existence. As with the icteric form, no specific diagnostic test exists unless one attempts human transmission experiments. In general it may be said that, with the previously mentioned clinical signs and symptoms, the presence of an abnormal and rising thymol turbidity, usually supported by an abnormal cephalin-cholesterol flocculation, makes the diagnosis of acute anicteric virus hepatitis probable. The findings of lymphocytosis and of abnormal lymphocytes in the peripheral blood are supportive evidence.

Foremost in the differential diagnosis are cholecystitis, infectious mononucleosis, virus pneumonia, peptic ulcer, and psychoneurosis. All but the last may generally be eliminated by negative findings with appropriate roentgen and laboratory examinations. In those few cases of virus hepatitis in which there is a rise in heterophil antibodies, the absorption tests will usually distinguish these from the antibodies of infectious mononucleosis. Psychoneurosis frequently enters into the differential diagnosis because, in the absence of jaundice, the symptoms of acute virus hepatitis often appear sufficiently vague and nonspecific to mimic psychoneurotic complaints. However, *if the possibility of a virus infection of the liver is borne in mind, the differentiation should not prove difficult. Doubtless acute anicteric virus hepatitis is often the unrecognized cause for vague gastrointestinal complaints and unexplained chronic fatigue.*[18]

As the counterpart of this situation some observers feel that the symptoms that may persist in a small percentage of patients in the months following the acute illness (post-hepatitic syndrome) are really due to a "hepatic neurosis." [18c] This is a difficult problem to resolve, because these symptoms may persist in the face of return of the blood chemical determinations to normal values. To clarify the thinking in this problem the terms "chronic active" and "chronic inactive hepatitis" have been proposed.[19] The chronic active cases are defined as those with relatively severe symptoms but either with or without corresponding laboratory evidence of liver dysfunction. The chronic inactive cases are defined as those with laboratory evidence of liver damage but without significant symptoms. Four months is the maximum period generally considered sufficient to allow for recovery from the acute illness. Thus the diagnosis of chronic active hepatitis is made primarily on positive clinical grounds, whereas the diagnosis of chronic inactive hepatitis depends mainly on positive laboratory findings.

Hepatic dysfunction may exist in combination with any of the diseases mentioned above under the differential diagnosis, secondarily in some and independently in others. For example, in two of our patients the presence of a duodenal ulcer was revealed; in one case the ulcer antedated the acute hepatitis by many years and was no longer active; in the other case the presence of an ulcer had never been suspected prior to the development of excruciating epigastric pains during the period of convalescence from the hepatitis. This combination of diseases is particularly important because of the danger of sudden hemorrhage from the ulcer in the presence of liver damage.[5b] The hemorrhagic phenomena occurring in acute virus hepatitis, resulting from the disturbances in prothrombin formation in the liver, have been emphasized.[20]

The importance of diagnosing hepatitis without jaundice rests on its morbidity and possible chronicity. In patients with acute virus hepatitis who are immediately treated, it is thought that icterus is less likely to develop than in their untreated counterparts.[21]

It is these latter untreated patients with whom we are most concerned, for occasionally their hepatitis progresses to the chronic stage.[22] In view of the marked similarity between the icteric and nonicteric forms of acute virus hepatitis and their coexistence in epidemics, it is not unreasonable to assume that the etiological agent is the same for both. Since the progression of acute icteric hepatitis to cirrhosis has been amply demonstrated,[23] a similar train of events is possible for the anicteric form. While this has been suspected,[24] with the possible exception of a report by Damodaran [6b] it has never been proved. It is difficult, if not impossible, for one to gather in retrospect an accurate past history from cirrhotic patients with a view toward determining the existence of nonicteric anlage of virus origin. Before the last decade, anicteric hepatitis in most cases was probably undiagnosed or misdiagnosed as grippe or influenza.[4a] Furthermore, in attempting to interpret past episodes as due to a specific virus infection, one must keep in mind the very cyclic nature of the course of cirrhosis of the liver. However, the increasing awareness of this entity makes it possible to follow such patients from the inception of such illness. Only by such long observations will it be feasible to assess with accuracy the possible etiologic role of acute anicteric virus hepatitis in the production of chronic hepatitis and cirrhosis.

Work with human volunteers [25] has shown that the virus of infectious hepatitis may be transmitted through the injection of blood, its products, or fecal extracts. Subsequently either the icteric or anicteric variety of hepatitis develops. It has been demonstrated, as well, that the virus of infectious hepatitis may be present in the blood without clinical signs or symptoms.[26] Consequently it is probable that a carrier state exists in this disease.[27] In this respect, Neefe [11f] states that "evidence of the probable importance of the asymptomatic carrier is slowly accumulating." In our consideration of anicteric hepatitis it becomes clear that such patients, if their disease is undiagnosed, may act as sources for the further spread of the disease.

Leibowitz and associates,[28] Kuh and Ward,[29] and Trumbull and Greiner [30] have indicated the problems that virus hepatitis presents in hospitals and laboratories. Virus hepatitis is now considered an industrial compensable disease in the state of New York.[28] Twelve of the present series of cases of acute anicteric virus hepatitis occurred among the nurses and other personnel of the hospital. Three patients—a nurse, a secretary, and a technician—were seen in the personnel health clinic within the space of two days. In spite of a careful epidemiological search, we were not able to localize the source of the virus or the presence of a carrier. All nursing personnel have been instructed to use rigid precautions in handling patients with virus hepatitis. We cannot emphasize too strongly that, insofar as hospitals and similar institutions are concerned, virus hepatitis, particularly the anicteric form, represents a serious epidemic threat.[31]

An explanation for the absence of jaundice in anicteric hepatitis is still lacking. The problem has received scant attention. The factors concerned are probably the potency of the virus and the host resistance, coupled with the presence or absence of precipitating factors, such as exhaustion or alcoholic debauch.[32] One can equally postulate the presence of a particular strain of attenuated virus which can cause the anicteric form only. However, in view of the usual coexistence of both forms in epidemic outbreaks, it is probable that anicteric hepatitis is the result of variation of the virus-host relationship. On pathologic grounds [1y] icteric and anicteric hepatitis can be distinguished only by the presence of biliary thrombi in the former; this again suggests a single exciting agent.

SUMMARY

The clinical and laboratory findings in 30 sporadic cases of acute anicteric virus hepatitis are presented. An awareness of the possible existence of this disease is probably the most important factor in diagnosis. The most frequently encountered symptoms were fatigue, anorexia, distaste for smoking, abdominal pains, headache, and nausea. Tenderness over the liver area was elicited in 79% of the patients. The liver was palpably enlarged in 56%. The liver was neither palpable nor tender in 16%. Thymol turbidity was positive in all patients; cephalin-cholesterol flocculation was positive in 86% of the patients.

All patients in this series recovered completely within a period of four months with the exception of one, who showed evidence of chronic active hepatitis one year after the onset of her illness. The occupational and epidemiological hazards of this disease are emphasized.

105 E. 177 St. (53) (Dr. Denber).

Hypertension.—Hypertension, like fever and leukocytosis, is a sign of disease and not a disease in itself. It is one manifestation of an underlying disease process, and a common one, since approximately 15,000,000 people in the United States are estimated to have hypertension. The incidence of hypertension increases steadily from the third decade of life, being less than 5% for individuals under 40 years of age and more than 20% for those beyond 40. Five per cent or slightly more of patients with hypertension have their increased blood pressure on the basis of a known, although incompletely understood, cause. The vast majority, or approximately 95%, have their hypertension as the result of unknown cause or causes. These hypertensives are said to have essential hypertension, a term which is comparable to "fever of unknown origin." Until current and future research further clarifies the etiology and pathogenesis of essential hypertension, a better term for the condition is hypertensive vascular disease, since this emphasizes the basic pathophysiologic condition rather than one of its measurable signs.—G. E. Wakerlin, M.D., Pathogenesis and Treatment of Essential Hypertension, *The Medical Clinics of North America*, January, 1952.

CORNELL MEDICAL INDEX-HEALTH QUESTIONNAIRE

V. OUTPATIENT ADMITTING DEPARTMENT OF A GENERAL HOSPITAL

A. J. Erdmann Jr., M.D., K. Brodman, M.D., I. Lorge, Ph.D.
and
H. G. Wolff, M.D., New York

It is desirable that physicians seeing outpatients in a general hospital have available a technique of rapidly eliciting a comprehensive medical history to aid in identifying patients who require not only investigation of their presenting symptom but general medical care as well. This communication describes the usefulness of the Cornell Medical Index-Health Questionnaire in identifying patients requiring general medical investigation.

DESCRIPTION OF HEALTH QUESTIONNAIRE

The Cornell Medical Index-Health Questionnaire, (C. M. I.) is a four-page self-administered form that collects a detailed and comprehensive medical history. On it are printed 195 questions, which the patient answers by circling a "yes" or a "no" after each. The data collected are accurate [1] and significant, yielding comprehensive diagnostic interpretations of the somatic [2] and psychiatric [3] aspects of the patient's total medical problem. The C. M. I. can usually be examined and interpreted in less than two minutes.

METHOD

The sample studied was composed of 336 outpatients newly admitted to the medical and surgical departments of the New York Hospital (a teaching general hospital cooperating with Cornell University Medical College) during April, 1949, who had completed a C. M. I. The hospital physicians never saw the C. M. I. forms filled out by the patients. Five persons who had never seen the patients or their hospital records (a private practitioner of general medicine, a Veterans Administration physician, a medical intern, a graduate nurse, and a technician) independently examined and interpreted the C. M. I. of each patient. They recorded their interpretations of (1) the patient's need for general medical department care and (2) the diagnostic areas [2] in which they inferred disease. After these interpretations were completed, the hospital records were abstracted, tabulating for each patient (1) whether the admitting physician had referred the patient to the general medical department and (2) the diagnostic areas in which disorders had been diagnosed in hospital examinations. Finally, the hospital record abstracts were compared to the interpretations of the C. M. I.

RESULTS

The accompanying table shows the number of patients who needed assignment to the general medical department, as recognized by the admitting physicians and by the interpreters of the C. M. I. Of the 79 patients assigned to the general medical department by admitting physicians, the need for this assignment was recognized by interpreters of the C. M. I. in an average of 71. Five of the other eight had been assigned there only because of the hospital policy of referring all patients to the general medical department before admitting them to special departments such as the cardiac or allergy departments.

Of the 257 patients not assigned to the general medical department by admitting physicians, interpreters of the C. M. I. inferred that 180 needed this assignment, 59 urgently. Twenty-four patients were recalled for reexamination in this investigation; 10 returned, and significant disorders previously overlooked in the hospital were discovered in each. With these 10 patients, disorders inferred from the C. M. I. but not suspected in routine hospital examination were found on reexamination in 85 diagnostic areas. The same was true with all 336 patients. Significant disorders were inferred from the C. M. I. in an average of 6.8 diagnostic areas per patient but had been recognized in the hospital in an average of only 2.7.

Number of Patients Needing General Medical Examination as Rated by Outpatient Admitting Physicians and by Interpreters of C. M. I.

		Outpatient Admitting Physicians		
		Need Recognized	Need Not Recognized	Total
Interpreters of C. M. I.	Need recognized	71	180	251
	Need not recognized	8	77	85
	Total	79	257	336

REPORT OF CASES

The following histories illustrate grave diseases overlooked in the hospital when the patient's need for general medical investigation had not been recognized by the admitting physician.

A housewife, 53, with five years of elementary education, sought outpatient admission with a presenting symptom of "shooting pains in both ears." Without questioning her about other symptoms the admitting physician referred her to the ear, nose, and throat department, where, after three visits in as many months, the examining physician noted "clinical improvement" and "no complaints except occasional sore throat; return according as circumstances may require."

On the C. M. I. the patient had recorded 54 complaints, only 4 of which referred to her ears and respiratory tract. Because of the 50 other complaints, the interpreters of the C. M. I. inferred that the patient needed general medical care for symptoms of disorders of her eyes, ears, respiratory tract, blood pressure,

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Technical assistance was given by Todd H. Broadbent.

Sample copies of the Cornell Medical Index-Health Questionnaire may be obtained from the authors, the New York Hospital, 525 E. 68th St., New York 21.

This study was done under a contract, recommended by the National Research Council, between the Veterans Administration and Cornell University Medical College.

From the New York Hospital and the Departments of Medicine (Neurology) and Psychiatry, Cornell University Medical College, and the Institute of Psychological Research, Teachers College, Columbia University.

[1] Brodman, K.; Erdmann, A. J., Jr.; Lorge, I., and Wolff, H. G.: The Cornell Medical Index: an Adjunct to Medical Interview, J. A. M. A. **140**: 530-534 (June 11) 1949.

[2] Brodman, K.; Erdmann, A. J., Jr.; Lorge, I., and Wolff, H. G.: The Cornell Medical Index-Health Questionnaire: II. as a Diagnostic Instrument, J. A. M. A. **145**: 152-157 (Jan. 20) 1951.

[3] Brodman, K., and others: The Cornell Medical Index-Health Questionnaire; III. The Evaluation of Emotional Disturbances, J. Clin. Psychol., to be published. Brodman, K., and others: The Cornell Medical Index-Health Questionnaire: IV. The Recognition of Emotional Disturbances in a General Hospital, ibid., to be published.

cardiovascular system, urinary tract, teeth, gallbladder, skin, gynecologic endocrine system, weight, veins of the lower extremities, and emotional disorders.

In reexamination in this study these inferences were confirmed. The patient said she "had wanted a general check-up but did not know how to go about it." For five years various physicians had told her that her blood pressure was elevated; recently she had had swollen ankles, chest pains, dyspnea with exertion, palpitations, and shortness of breath, especially when emotionally disturbed. A cholecystogram seven years before showed "inflammation of the gallbladder," and she still had "bilious attacks" accompanied by "yellow eyes." Since her menstrual periods stopped seven years before, she had had frequent severe hot flashes and spells of dizziness.

On examination the blood pressure was 170/100 mm. Hg, and there were signs of cardiac failure. A chest roentgenogram revealed enlargement of the heart on the left and some aortic enlargement. X-ray examination of the gallbladder showed no structural defect. The physician reexamining the patient concluded that her most important disorders were hypertensive cardiovascular disease with failure, anxiety state, vascular headaches, obesity, menopause, varicose veins, and possible cholecystitis. He believed her ear and respiratory disorder, the only one recognized in the hospital, to be minor. The 50 symptoms on the C. M. I. unrelated to her ears or respiratory tract called immediate attention to her need for general medical care, a need overlooked by the admitting physician, who had failed to elicit a comprehensive medical history.

In another patient, significant gynecologic and psychological disorders were overlooked. This patient was a housewife, 40, with one year of high school education, who was referred by the admitting physician to the dermatology department for a presenting symptom of itching skin. There her disorder was diagnosed as lichen planus and treated with salve and other medicaments. On her C. M. I. were 59 complaints besides the 3 related to her skin. Interpreters of the C. M. I. inferred a need for general medical care for disorders of the teeth, bowel habits, musculoskeletal system, skin, urinary tract, gynecologic system, and emotional status. On reexamination of the patient these inferences were confirmed. The gynecologic and emotional aspects of her total medical problem proved to be of major importance. Because of a pelvic mass the patient was referred to the gynecology department, where arrangements were made for immediate inpatient admission, with a tentative diagnosis of carcinoma of the ovary. During the hospital stay a bilateral salpingo-oophorectomy was performed. The pathological report was "chronic salpingitis and benign serous and follicular cyst of the ovary"; the discharge diagnosis was chronic "pelvic inflammatory disease."

A psychiatrist noted, "The patient volunteers her opinion that the skin lesions are due to 'nervousness' related to her husband. . . . He is luetic, and she believes him to be mentally sick. She has a great fear of syphilis and insanity. . . . [There is] a long history of stress, tension, grief, disappointment, and family conflict."

The admitting physician, questioning the patient only about her presenting symptom of itching skin, failed to recognize her need for general medical care. The C. M. I., however, called attention to this need and to the presence of symptoms of potentially grave gynecologic and psychiatric disorders.

Cardiac, psychiatric, and neurological disorders were overlooked in a housewife, 75, who sought outpatient admission with a presenting symptom of "little growths and itching between the breasts." The admitting physician questioned her only about her skin and referred her to the dermatology department, where her disorder was diagnosed as seborrheic verruca and intertriginous eczema. On her second visit, nine days later, the examining physician noted "all clear" and discharged her.

On the C. M. I. only 3 of the patient's 99 complaints referred to her skin. The interpreters of the C. M. I. concluded that the patient needed general medical care and inferred disorders of the eyes, respiratory system, blood pressure, vascular system, gastrointestinal tract, gallbladder, anal veins, musculoskeletal system, skin, nervous system, genitourinary tract, and psychiatric status.

In reexamination in this study the patient said that on her first hospital visit she had "wanted a general check-up but did not have the nerve to ask for it." Significant disorders were found in each of the diagnostic areas predicted with the C. M. I. The patient told of her long-standing, severe depression, relating it to distress about her six children, each of whom is seriously ill or in financial difficulty.

On physical and laboratory examination the significant findings were a gross tremor of the hands, head, and legs, a blood pressure of 240/140 mm. Hg, an enlarged heart, moderate ankle edema, sclerosis of the retinal and other peripheral blood vessels, absent pulsation of the dorsalis pedis arteries, and thrombosed hemorrhoids. The important final diagnoses were hypertensive and arteriosclerotic cardiovascular disease with failure, Parkinson's disease, and a severe reactive depression.

Clearly this patient's total medical problem was far too complex to be considered in the dermatology department alone. She needed general medical care; yet the admitting physician, questioning the patient only about her skin, never learned of her other symptoms. With the C. M. I., however, her need for referral to the general medical department was immediately apparent.

COMMENTS

No matter how desirable it may be to make a general medical investigation of each new outpatient, general hospitals lack the facilities and staff for such an investigation. Nor is it possible for admitting physicians in an oral interview to collect a sufficiently detailed and comprehensive medical history from each outpatient to identify those most needing general medical care. Consequently, as shown in this paper, the need of many patients for general medical care is overlooked, and grave medical disorders are neglected.

The C. M. I., without the physician's participation, collects a detailed and comprehensive medical history that permits identification of patients requiring general medical investigation. With such a history, admitting physicians can select for assignment to the general medical department as many patients most needing general medical care as the department is equipped to handle. This judicious selection of cases for general medical care on the basis of a comprehensive body of significant medical data reduces the hazard of overlooking significant disorders by referring too few patients to the general medical department or of overburdening the department by referring too many.

SUMMARY

The Cornell Medical Index-Health Questionnaire (C. M. I.), a self-administered form, elicits a detailed and comprehensive medical history that permits the identification of patients requiring general medical investigation. Admitting physicians at the New York Hospital, a teaching general hospital, recognized that 79 of 336 consecutive outpatients needed referral to the general medical department; with the C. M. I. this need was inferred in 251. Reexamination of a sample of these patients confirmed the accuracy of the inferences based on the C. M. I. Many of the average of 4.1 disorders per patient inferred from the C. M. I. but overlooked in the hospital were of graver medical significance than the average of 2.7 recognized in the hospital.

UNUSUAL LESIONS OF STERNUM ASSOCIATED WITH SHOULDER PAIN

REPORT OF THREE CASES

Robert W. Dunlap Jr., M.D.
and
John C. Ivins, M.D., Rochester, Minn.

Pain in the shoulder joint may often present a difficult diagnostic problem.[1] Abnormalities of the cervical part of the spinal column, lesions within the chest cavity, disease of the coronary arteries, irritation of the diaphragm, neurological lesions, and disease of the gallbladder are among the conditions commonly considered in the differential diagnosis of pain in the shoulder joint or its surrounding structures. Little attention has been paid to lesions of the sternum as a cause of referred pain in the shoulder, possibly because lesions of this bone are relatively uncommon. We have recently seen at Mayo Clinic three cases of sternal lesions, in which the patients' chief complaint, either throughout the illness or at one point during it, was pain in the shoulder. Two of the patients had demonstrable limitation of movement at the shoulder joint; one had paresthesias in the forearm of the affected side. In none of these patients, when first seen, were the symptoms thought to be the result of the sternal lesion. All were relieved by surgical treatment.

REPORT OF CASES

Case 1.—A 36-year-old woman first came to the clinic on Sept. 18, 1950, complaining of chest pain of one month's duration. She had had pneumonia five years previously, following a pelvic operation and again the following year. Since that time she had experienced recurrent sharp pains under the right breast, which extended, at times, to the back in the region of the right scapula and upward to the back of the head, giving her a sensation of "little wheels" turning around in the right side of her head. In addition to substernal pain, she had fever and a productive cough when admitted to the clinic. The fever subsided with antibiotic therapy, but the cough and pain persisted. The pain was aggravated by deep inspiration and extended to the right shoulder and to the area around the right breast. She did not complain of dyspnea on exertion. She had had "gaseous bloating," but this was not accompanied by pain, and no other gastrointestinal symptoms were noted.

The initial physical examination revealed little more than questionable tenderness over the lower part of the sternum. It was noted that the patient seemed unduly upset over the symptom complex. The results of routine laboratory studies were normal. A roentgenogram of the chest showed obliteration of the left costophrenic angle, with some linear fibrosis in the base of the left lung; however, special roentgenograms of the sternum revealed a fracture of the xiphoid process, with displacement of the fragment upward and posteriorly. We believed, during the time the patient was undergoing study, that it was inconceivable that this fracture was the basis of her primary distress and that she was overreacting to her pain; however, because of tenderness over the xiphoid process and the fact that pressure on it reproduced some of her distress on one occasion, removal of the fractured fragment was undertaken. The operation was performed on Sept. 27, 1950, and at that time it was noted that manipulation of the xiphoid process while the patient was under anesthesia produced a response that is characteristically associated with painful stimuli. A midline incision was made, and the fragment was found to lie posteriorly and superiorly, so that its upper end was behind the body of the sternum. It was removed, and the muscles approximated in the midline.

The patient had an uneventful recovery and was free of pain when dismissed from the hospital, although her cough continued for about two weeks. She was last seen two months later, and at that time she was symptom-free and felt better than she had for years.

Since there was no history of trauma in the foregoing case, it seems likely that the fracture of the xiphoid process occurred during a coughing spell in one of the patient's previous attacks of pneumonia and was aggravated by her subsequent coughing. We were unable to find coughing mentioned in the literature as a cause of fracture of the xiphoid process.[2]

Case 2.—A 45-year-old housewife came to the clinic on May 31, 1950, with the complaint of recurrent pain in the shoulder, arm, and chest on the right side. About 10 years previously the first attack of pain and stiffness in the right scapular region had occurred, appearing one morning when she leaned suddenly on her right elbow on getting out of bed. After several months the pain disappeared, and she was symptom-free several years, until a similar pain returned. In the 18 months prior to her admission her symptoms had become worse, with pain in the right shoulder accompanied by pain and soreness over both sternoclavicular joints. The pain caused limitation of movement that prevented her combing her hair. Coughing, sneezing, riding in a car, sudden movement, or lifting caused aggravation of her symptoms, with intense pain in the sternoclavicular joints that extended across the upper chest wall. She had noticed numbness extending down the anteromedial aspect of her right arm and into the fourth and fifth fingers, and she had some weakness of grip in the right hand, although there was no atrophy. The numbness increased with jarring of the arm. Later she had noticed some numbness in the left arm at times when her neck and back were sore. Her right hand seemed to be colder than the left and was even blue at times. Her symptoms had been increased in severity by osteopathic and chiropractic treatments. An inventory of systems revealed little else of significance. She had noticed occasional cardiac irregularities that felt like skipped beats, but there were no other symptoms referable to the heart.

A physical examination disclosed limitation of motion of the right shoulder. The cervical part of the spinal column moved freely. There was a point of tenderness near the medial angle of the right scapula and over the right acromioclavicular joint. At the manubriosternal joint there was considerable tenderness on palpation. Laboratory data were not indicative of any abnormality, with the exception of the sedimentation rate, which was 23 mm. in one hour (Westergren method). Roentgenograms of the cervical part of the spinal column showed minor degenerative changes that were not significant. Special sternal roentgenograms revealed slight irregularity of the joint surfaces of the manubriosternal joint at the site of tenderness.

It was decided to explore this joint surgically, and this was done on June 8, with the patient under thiopental (pentothal®) sodium, nitrous oxide, and curare anesthesia. The manubriosternal joint was curetted, and then a sliding graft was cut with a twin-bladed saw, reversed, and placed across the joint. Pathological study of the curettings revealed fibrous replacement of

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From the Section of Orthopedic Surgery, Mayo Clinic (Dr. Ivins).

Fellow in Surgery, Mayo Foundation, University of Minnesota (Dr. Dunlap).

[1] Symposium on Pain in the Shoulder and Arm, S. Clin. North America **26**: 799 (Aug.) 1946.

[2] Stuck, W. G.: Fractures of the Sternum, Am. J. Surg. **22**: 266 (Nov.) 1933. Holderman, H. H.: Fracture and Dislocation of the Sternum: Report of 3 Cases, Ann. Surg. **88**: 252 (Aug.) 1928.

the marrow. When the patient was sent home on the 11th day after the operation, she said she had been completely relieved of her pain and of the paresthesias in the forearm and fingers. In a communication three and one-half months later, the patient stated that she had had continued relief from symptoms in the right arm. She also noted that her heart no longer skipped beats.

The foregoing case is interesting not so much from the point of view of representing a diagnostic problem as from that of showing the amount of disability that can occur in the arm and shoulder as a result of referred pain from the sternum.

Case 3.—A 60-year-old woman was admitted to the clinic on Nov. 3, 1948, with the following primary complaints: (1) pain in the back and soreness in the chest of four weeks' duration, (2) pains in the neck of two years' duration, and (3) the presence of gallstones for one year. She had come to the clinic in 1940 for conditions that were diagnosed as menometrorrhagia, obesity, secondary anemia, eroded cervix, perineal relaxation, and benign hypertension. Dilatation and curettage of the uterus, with insertion of radon (menopausal dose), was done at that time.

Her neck pains were associated with stiffness and, when she moved her neck, "cracking." There was stiffness and aching in the back, chiefly in the lower thoracic and lumbar regions, that was aggravated by movement. There was some soreness in the upper part of the sternum that became worse when the patient attempted to lift anything. The cholelithiasis had been discovered by her home physician after a typical attack of upper abdominal pain extending to the back and lasting for two weeks. More recently she had exhibited gaseous distress and aching in the midback.

On physical examination her blood pressure was found to be 164 mm. Hg systolic and 70 mm. Hg diastolic on one occasion, and 130 mm. Hg. systolic and 75 mm. Hg diastolic on another. She was moderately obese and had slight epigastric tenderness on the left side. There was some tenderness at the manubriosternal joint. Her spinal column was tender to palpation at the fifth lumbar level. A cystocele and retroversion of the uterus were also found. A sedimentation rate of 47 mm. in one hour was the only abnormal laboratory finding. Sternal roentgenograms showed localized degenerative changes at the manubriosternal junction. Roentgenograms of the gallbladder showed poor function and the presence of stones. Roentgenograms of the spinal column disclosed extensive hypertrophic changes in the cervical portion, with increased density of the body of the third cervical vertebra, compression of the body of the sixth cervical vertebra, and prolongation of the left transverse process of the seventh cervical vertebra. There were hypertrophic changes with marginal lipping in the dorsal and lumbar portions of the spinal column. Cholecystectomy was recommended. The patient was placed on a weight reduction diet and advised to return later for operation.

On Feb. 25, 1949, word was received that the patient was ill at home with "arthritis." Shortly thereafter she began to experience pain in the right shoulder, in the region of the upper part of the humerus on the lateral and medial aspects. She returned to the clinic on March 12, and it was noted that there was a limitation of abduction at the right shoulder. A short course of physiotherapy resulted in some improvement. The pain in the sternum, however, was decidedly increased. The sedimentation rate had risen to 95 mm. in one hour. Roentgenograms of the right shoulder disclosed no abnormality, but those of the sternum again showed what appeared to be an inflammatory change at the manubriosternal junction. Biopsy of the sternal lesion was done on April 1. Removal of the outer cortex resulted in a pronounced pain reaction while the patient was under thiopental sodium anesthesia. A small cavity that was filled with reddish-brown myxomatous material was encountered. When studied microscopically, this showed evidence of inflammation, with an excess of eosinophils and plasma cells. No foam cells were seen, and the results of guinea pig inoculation were negative after two months. The patient's pain was relieved after the biopsy and surgical evacuation of the lesion. She received two doses of roentgen rays to the sternum and was dismissed from the clinic on April 21, completely asymptomatic.

Although a diagnosis of rheumatoid arthritis or spondylitis was not made in this case, the patient had a history of an attack of "arthritis" at home and she had a pronounced elevation of the sedimentation rate. This is interesting in view of Solovay and Gardner's [3] recent evidence that the manubriosternal joint is probably involved in rheumatoid spondylitis much more frequently than was previously supposed. They demonstrated that fusion of this joint occurs four times as frequently in patients who have had rheumatoid spondylitis as it does in normal persons. From this they assumed that in such cases the disease process at one time involved this joint. It is possible that this was the basis of this patient's condition.

COMMENT

In these three case reports emphasis has been placed on the presenting complaints of the patient. In each case, there was considerable doubt that a lesion of the sternum could be responsible for all the pain and other symptoms complained of by the patient. It would have been easy to consider, as is often done, such nondescript symptoms as functional in origin and finally to assess the case as one of chronic nervous exhaustion.

Little has been written in the past about lesions of the sternum and their symptomatology. The proof that such lesions may be responsible for a bizarre and complex set of symptoms is indicated by the fact that each patient reported obtained subjective relief from surgical treatment. We feel, therefore, that surgical treatment should be seriously considered for sternal lesions that cause continued local pain and are suspected of causing many associated symptoms. The procedures used in these cases are minor and may be undertaken with a minimum of risk.

SUMMARY

Three cases of unusual lesions of the sternum in which pain in the shoulder was one of the chief presenting complaints have been reported. The first case was that of a spontaneous fracture of the xiphoid process and the other two were of degenerative lesions of the manubriosternal joint. All three patients were symptomatically relieved by surgical means.

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3. Solovay, J., and Gardner, C.: Involvement of the Manubriosternal Joint in Marie-Strümpell Disease, Am. J. Roentgenol. 65: 749 (May) 1951.

Illness and Emotions.—Everything that is said or done to a patient is a stimulus applied to him. Biologically, every stimulus is likely to produce a response, and with such complicated organisms as patients the response may be subtle and indirect and profoundly modify future thinking and feeling and future adjustment to life and its problems.

The doctor, like the priest, is to unsophisticated minds a symbol of mystery and power, with a great capacity for inducing emotion, for allaying anxiety, or for causing it. Few doctors and fewer patients are always logical beings whose reactions are consistently determined by reason. Sickness, or the fear of it, returns us all a little closer to childhood and to a more primitive state of mind in which it is unusually easy to implant an idea or induce a way of feeling without any rational basis. Most practitioners do not employ suggestion as a conscious and deliberate method of therapy, but it enters into every professional relationship whether or not it is recognized as suggestion.—K. R. Stallworthy, Diseases Due to the Doctor, *New Zealand Medical Journal*, February, 1952.

J.A.M.A., June 7, 1952

VISITING NURSE SERVICE

COMMUNITY ASSET FOR EVERY PHYSICIAN

William P. Shepard, M.D.
and
George M. Wheatley, M.D., New York

Once again the requirements of the armed forces and the needs of civilian defense for medical and nursing personnel necessitate a careful appraisal and economical utilization of all the health resources of the community. An organized service whose contribution to medical care should not be underestimated is that provided by visiting nurse associations. The actual and potential value of this part time nursing care given in the home commands the attention not only of practicing physicians but of medical authorities responsible for assessing and determining the adequacy of community health facilities.

Visiting nurse service is an essential element in organized community health programs as, for example, in tuberculosis, cancer, heart disease, and maternal and child health services where it provides part time care and teaching in addition to the preventive services provided by the health department. Recently it has been recognized as a valuable though undeveloped resource in the operation of prepaid medical care plans.

We have discovered that some physicians, not familiar with the organization, objectives, and operation of a community visiting nurse service, think of this activity as a form of "socialized medicine." We know from some years of experience in the administration of this service that visiting nurse service is not "socialized medicine" in the commonly accepted sense of this term. On the contrary, it is a product par excellence of the voluntary health movement in this country, and thus becomes an excellent defense against demands for government control of medical practice. It is the practicing physician's partner in caring for the sick. In view of the growing importance of home care of the sick, we are convinced that a visiting nurse service has a role to play commensurate with that of the hospital. It is our purpose to emphasize the importance of visiting nursing in modern medical care and to review the types of service this voluntary health agency has long rendered to the practicing physician, and is prepared to render in even greater amounts.

Visiting nurse service in North America began in New York City as early as 1877.[1] Its purpose was to supplement the physician's care in the home. The need and value of the service were soon demonstrated. The idea quickly caught on, and within a few years services were organized in most of the cities of the United States. Today there are 1,038 [2] visiting nurse associations in the United States, employing 4,774 graduate nurses. Many of these nurses have additional training that equips them to assist in educational and preventive health services of the community. About 8,000 cities and towns in the United States and Canada are served by visiting nurse associations.

Our experience in reviewing the annual statements of these agencies is that nurses generally average about 2,000 visits a year, if they are not also involved in clinics and classes, so that it may be estimated that these organizations are responsible for approximately 10,000,000 visits per annum. If we can assume that there are an average of five visits in each case, and this appears to be the general experience, this would mean that approximately 2,000,000 patients are visited in the course of the year.

Our regular annual analysis of the Metropolitan Visiting Nurse Service shows that of our total approximately 330,000 cases during 1950, nearly 30,000 or 8.7% were reported by physicians. If this experience were applied to the total visiting nurse service, it would indicate that, of the 2,000,000 cases, 174,000 resulted from calls for the visiting nurse received from physicians, and that these calls resulted in a total of 870,000 visits. It can also be assumed that a considerably larger, but immeasurable, number of calls and visits made by the public health nurse were prompted by the physicians' instructions or request for her services that may have been reported to the visiting nurse agency by patients, employers, and others.

NEED FOR VISITING NURSE SERVICE

Today major factors that tend to reemphasize the home as an important place where medical care may be rendered are the increasing cost of hospitalization; the growing number of older persons with chronic disease, many of whom may be adequately cared for at home with proper planning and services; the development of potent therapeutic agents such as the antibiotics enabling the physician to treat cases at home in which formerly hospitalization was necessary; and recognition of the importance of social and psychological factors in illness. Until recently, little medical judgment was required to decide on hospitalization of the patient. Nearly always circumstances made it appear that the hospital was best. Now, in view of the factors just mentioned and others, the physician must more seriously consider treating the patient at home. Where a visiting nurse service is available, more judicious and perhaps limited use of hospital service is possible.

Nursing care is frequently needed during convalescence. For example, a recent study by Downes [3] of acute and chronic illness after discharge from the hospital showed an average of 6 days of bed disability at home for all forms of acute illness, and 35 days of bed disability for chronic disease. Rheumatic fever patients averaged 132 days in bed at home after hospital discharge. Visiting

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From the Health and Welfare Division, Metropolitan Life Insurance Company.

[1] Gardner, M. S.: Public Health Nursing, ed. 3, New York, The Macmillan Company, 1936.

[2] Total number of nurses employed for public health work in the United States, in the Territories of Alaska, Hawaii, Puerto Rico and Virgin Islands, Federal Security Agency, United States Public Health Service, 1951.

[3] Downes, J., and Tucher, D.: Need for Convalescent Care for Hospitalized Acute and Chronic Illness, Pub. Health Nursing 43:483 (Sept.) 1951.

nurses, if utilized, might have shortened the disability of some of these patients. Many patients and their families could have been helped to adjust to this phase of recovery.

Hospital administrators, perhaps more keenly aware of cost factors, have begun to use visiting nurse service to shorten hospital stay and thus help to reduce the cost of medical care. With the average cost of ward care in the hospital about $15 per day, the economic advantage of early discharge from the hospital and use of the visiting nurse at about $2.50 per visit is obvious. The Montefiore Hospital home care program [4] has made every effective use of visiting nurse service. Cherkasky says, "The Visiting Nurse Service of New York, by contracts with us, visits each patient at least once, even in those cases where we do not forsee any need for visiting nurse service, since their experience in the home will give us a good evaluation of the patient and the patient's need for nursing. In addition, the nurses have two other important functions. They provide nursing and they teach. The teaching is in some respects the most important part of their job. They often teach a member of the family to become an expert nurse in the care of a particular patient." The home care program of the New York City Department of Hospitals, which also includes the services of visiting nurses, has been stated to be equivalent to a 1,500 bed hospital operating at 85% capacity.[5]

Today, with the rising cost of medical care, especially hospital services, and the need to maintain our voluntary system of medical practice, it is more important than ever for physicians to utilize this voluntary health agency. Better understanding of the visiting nurses' contribution to medical practice is the first step towards its more effective use.

ORGANIZATION OF VISITING NURSE SERVICE

As a rule, the service is organized and administered by a group of public spirited citizens, with medical and public health representation on the board. Frequently a practicing physician or his wife has taken the leadership to bring together a representative community group. As mentioned previously, the service is designed to aid the physician in the care of the patient in the home. Care is not continued for patients unless they are under medical supervision. A medical advisory committee guides the agency in its professional services.

Contrary to the belief of many lay and professional persons, visiting nursing is available to people of all economic levels and is not limited to service to the indigent. Fees paid by individual patients make up about 16% of the total income of voluntary nursing agencies. Contracts with insurance companies, industry, and other organizations pay for approximately 12%. Individual contributors, the Community Chest, and such services make up the deficit resulting from those services for which the visiting nurse association is not paid. From our experience in purchasing nursing service for our policyholders from visiting nurse associations, we believe few health activities have been more carefully managed from the financial point of view and the cost more accurately determined. Today, the average cost per visit is about $2.50.

Medical Advisory Committee.—The local medical society or a medical advisory committee guides the professional services of the visiting nurses. This guidance includes the preparation and approval of standing orders to be used when the nurse is called to give emergency nursing care to a patient who is not yet under the care of a physician. Other functions of a medical advisory committee are as follows [6]:

> To make recommendations to the visiting nurse association board regarding the initiation and continuance of special phases of the agency's program that involve medical considerations.
>
> To assume joint responsibility with the board for policies regarding the nursing of patients under the care of osteopaths and similar practitioners.
>
> To help prepare or to approve any publicity that involves medical information or that is to be sent to physicians; and to help with the selection of medical speakers for annual and public meetings.
>
> To act as liaison between the organization and the medical society.
>
> To interpret the organization to the medical society.
>
> To approve the content and frequency of health examinations of the staff before and during employment, and to advise regarding a health program for the staff.

Visiting nurses are instructed to keep in close communication with the attending physician on each case. Nurses cannot continue giving nurse care to a patient who does not have medical supervision. The National Organization for Public Health Nursing sets standards and suggests procedures for visiting nurse associations throughout the country. Physicians will be interested in the following recommendations on medical relationships, which are quoted from the "NOPHN's Manual of Public Health Nursing." [7]

> *Medical Orders.*—No treatments except those stated in the standing orders of the agency are given without a physician's order, and the standing orders are used only until it is possible to communicate with the physician.
>
> When no written orders have been left by the attending physician and the patient's condition indicates the need for immediate treatment, every effort is made to communicate with the physician at once. Where possible, the physician's orders are to be written. Verbal orders may be received over the telephone by the nurse, but they are to be followed if possible by the written, signed order of the physician. Verbal orders for treatments or medication given through the patient or family are not to be carried out until the nurse can get in touch with the physician.
>
> If it is impossible to reach a physician personally or by telephone, he is notified by mail that the patient has been referred to the agency for nursing care, and he is asked for orders.
>
> Care other than that outlined in the standing orders of the agency is not usually given to patients of out-of-state physicians except upon the written order of the physician. This is a problem to refer to the local medical and advisory committee. It is the policy of some agencies not to accept orders from an out-of-town physician, unless he is near enough to be reached quickly or has designated a local physician to be called in case of immediate need for medical attention.
>
> *Nurse's Report to Physician.*—Bedside notes stating the nurse's observations regarding the condition of the patient and recording the care given are left in the patient's home when nursing

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[4] Cherkasky, M.: The Montefiore Hospital Home Care Program, Am. J. of Pub. Health 39: 163-166 (Feb.) 1949.

[5] Annual Report for 1950 for the Mayor, Department of Hospitals of the City of New York, 125 Worth Street, New York, N. Y.

[6] Wensley, E. E.: The Community and Public Health Nursing: A Handbook For and About Boards and Citizen's Committees (Pub.) for the Nat. Organization for Public Health Nursing, New York, The Macmillan Company, 1950.

[7] NOPHN'S Manual of Public Health Nursing, New York, The Macmillan Company, 1939.

care has been given. The nurse reports directly to the physician any symptoms of abnormality or change in the patient's condition. It is customary to destroy these bedside notes when the patient is discharged. Some agencies require the nurse to return them to the office after which they are destroyed at the end of the month.

Family Health Work.—Efforts are made to cooperate with the family physician in carrying out a family health program in regard to health examinations, correction of physical defects, and a healthful regimen of living. The nurse interprets the physician's orders and helps the family carry them out with the rescources at its command.

Private physicians are given information in regard to the kinds of service which they may expect from the nurse.

Osteopaths, Chiropractors, Optometrists, and Midwives.—A general policy for the giving of nursing service to patients under the care of osteopaths, chiropractors, optometrists, midwives, and similar practitioners cannot be stated definitely since the practice differs in the various states. Questions of policy are referred to the medical advisory committee of the agency for recommendation to the board of directors. However, the agency is largely governed in its decision by the existence or non-existence of a state law legalizing osteopathy, chiropractic, optometry, or midwifery. If such a law exists, nursing services in these cases are given only in situations where the medical procedures carried on by the practitioner are in accordance with the state law.

The nurse will acquaint herself with the state regulations which govern the practice of these various types of practitioners. She will find it necessary to have a clear understanding of her responsibility whenever these regulations are not adhered to.

SERVICES A VISITING NURSE CAN RENDER IN THE HOME

The following are some of the services that a physician may prescribe for patients under his care:

General Nursing Care.—He may prescribe as general care (*a*) the taking of temperature, pulse, and respiration and observation of changes in the condition of the patient; (*b*) cleansing bath and instructions in general hygiene, and demonstration of care to be given by the family and supervision of the care given by relatives or attendants; and (*c*) interpretation of the physician's instructions to the patient and family, e. g., diet, rest and activity, and medication.

Special Services.—Special services may include (*a*) treatments such as hot or cold applications, enemas, irrigations, catherizations and inhalations; (*b*) postoperative dressings and dressings for cuts and burns; and (*c*) hypodermic or intramuscular injections of drugs such as insulin, penicillin, and streptomycin.

Services in Pregnancy.—Services during pregnancy may include (*a*) interpretation and reinforcement of the physician's instructions regarding hygiene during the antepartum and postpartum period, that is, rest, exercise, diet, clothing, and care of the breasts; (*b*) assistance to parents in preparing for a new baby and advice regarding the layette and other equipment; and (*c*) demonstration to parents of how to care for the new baby, that is, bathing, feeding, dressing, and exercise.

In addition to serving the patient under the supervision of the attending physician, visiting nurses have an important role in helping to secure prompt medical attention for patients through referral to their own family physician or, when there is no family physician, by following the policy established by the medical advisory committee. The nurse's opportunity to see families puts her on the front line to observe early signs of illness and abnormality that should have a physician's care.

PATIENTS' OPINIONS

Perhaps if physicians knew how the patients feel who have had the opportunity to receive the services of the visiting nurse, they would utilize this resource more frequently. We have picked a few letters at random from the thousands in our files received in recent years from various parts of the country; they are poignant evidence of the medical as well as human relations value of this ancillary service.

I am writing to thank you for the wonderful service given my daughter by your visiting nurses. My sister had a relapse from a long recent illness and her doctor ordered strep shots at home. I knew no one to give them, then I remembered your nursing service and contacted you and my troubles were over. Thanks to God for the wonderful services of a doctor and a visiting nurse, she is now well once more.

Upon my return from the hospital last fall after fracturing my hip my doctor made arrangements for your nurses to massage my leg three times weekly to prevent its becoming permanently stiff. I wish to express my sincere appreciation for the excellent care and attention they gave me.

On March 5, 1950, I had an emergency operation for appendicitis. I was discharged from the hospital on March 13. That evening my husband called the nurse. Lucky for me, she came the next morning and found I was draining. She phoned my doctor and reported what she found. I was quite ill and would not have known what was wrong if it hadn't been for the nurse. During the same time, my children took ill with the virus grippe. The nurses did what she could for them too. I can't tell you how grateful I am to deal with such a wonderful organization as yours. Thanks again and again.

EXCERPTS FROM PHYSICIANS' LETTERS

Mr. D. has a well regulated colostomy but is anemic. In a rural area, he is inaccessible to frequent visits by either local medical doctors or myself. I have prescribed rubramin [a vitamin B_{12} concentrate], 1 cc. three times weekly, by hypodermic. His present blood count has been raised to approximately 3,500,000 with a hemoglobin of 75-80%. The nursing service is essential. A correction of the anemia will be served best by uninterrupted visitation for the purpose of injection.

M.D., Phila., Pa.

Due to the very efficient and alert action of one of your district nurses, a patient whom I was recently treating has been so greatly benefited that I thought perhaps it would serve a good purpose to bring the incident to your attention, inasmuch as it proved to be mutually beneficial to all concerned.

M.D., Bay Shore, L. I., N. Y.

Miss K. S., R.N., has and is still giving very satisfactory nursing care under my supervision to the toe stumps of the foot of Mrs. M. R. On a recent visit the foot showed a residual ulcer which was treated in my office and Miss S. given instructions for further nursing care. It is with Miss S.'s excellent cooperation that I was able to preserve Mrs. R.'s foot.

M.D., Shamokin, Pa.

SUMMARY

There are many reasons to reexamine at this time the contribution of visiting nursing service to medical care. The needs of the military and civilian defense necessitates efficient use of limited medical and nursing service. This means full employment of all community health services, including the visiting nurse. The increasing expense of hospitalization is making it necessary to seek less costly ways of treatment. There are also a greater number of older persons with chronic illness, many of whom may be better cared for in their homes if medical, nursing, and other necessary services are mobilized for their care. Furthermore there are important psychological advantages in many cases in home care.

Yesterday the physician treating sick people was a lone worker. Today in the management of many diseases, the physician has potent allied professional and therapeutic resources at his command. Until recently the location for employment of these tended to be in the hospital. Now many services can be efficiently rendered in the home. It is timely to recognize the part the visiting nurse can play as a member of the medical care team in making home care, in appropriate cases, as beneficial to the patient as hospital care. Some of the services have been described in detail. The full and effective employment of this nursing service calls for the highest type of medical judgment. Both medical and hospital administrators show a growing appreciation of the value of the services of visiting nurse associations in the home in supplementing hospital and other medical services. Individual practitioners today more than ever before are in a position to exert leadership in their communities to bring the best of modern medical care to their patients.

1 Madison Ave.

EPIDEMIOLOGY OF INFECTIOUS HEPATITIS AND PROBLEMS OF PREVENTION AND CONTROL

Richard B. Capps, M.D., Chicago
and
Joseph Stokes Jr., M.D., Philadelphia

Outbreaks of infectious (epidemic) hepatitis have been recognized for at least 200 years and probably for very much longer.[1] Although they are particularly extensive among armies in the field, civilian epidemics have also been frequently encountered. Accurate data are not presently available in this country because the disease is not generally reportable, but according to our personal experience epidemics are constantly occurring. That this virus infection represents one of the commoner infectious diseases occurring in this country is shown by recent studies with a specific skin test material.[2] It was found that approximately 35% of adults had positive reactions, indicating presumptive prior infection with the virus. The importance of this disease, however, is due not only to its high incidence but also to its relatively serious nature. Although the mortality rate is usually under 1%, the period of disability is frequently prolonged, and the occurrence of chronic cases is not unusual. Permanent sequelae may also occur but are apparently infrequent. Until recently too little accurate information was available regarding the etiology and epidemiology of the disease to allow for intelligent prevention and control.

It has been clearly established that the etiological agent of infectious (epidemic) hepatitis is a filterable virus present in both the blood and feces.[3] Experimental transmission of the disease has been accomplished by both the parenteral and fecal-oral routes. The possibility of airborne transmission has been favored by many workers on both epidemiological [4] and experimental [5] grounds. However, this has not been confirmed by others.[6] Although it has been claimed that the virus may be present in urine,[7] this seems unlikely.[8] In human volunteers the incubation period is usually between 20 and 40 days, although occasionally it has been as short as 15 or as long as 85 days.[8b]

One of the most important epidemiological problems still unsolved concerns the duration of infectivity and the question of a carrier state. Accurate experimental data are extremely limited. Virus has been found in the blood three days before the appearance of symptoms [9] and eight days after the onset of jaundice.[3e] Fecal material tested on human volunteers has proved to be infectious only when obtained during the first two weeks of jaundice.[10] There is suggestive experimental [11] and epidemiological [12] evidence, however, that in some cases it may remain infectious for five months or longer. Likewise, the role of the unrecognized acute nonicteric case in spreading the disease is not accurately known.

As would be anticipated from the foregoing, epidemics of infectious (epidemic) hepatitis resulting from parenteral transmission,[13] from contaminated water,[14] milk,[15] and food,[16] and from some form of direct contact between persons have been described. This is in contradistinction to the homologous serum strain of the disease, which thus far has been shown to be transmitted only by the parenteral route and apparently by the transplacental route. Epidemics of infectious (epidemic) hepatitis transmitted by the first four means do not concern us here since, if the mechanism of transmission is recognized, control measures can readily be instituted

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Read before the Joint Meeting of the Section on Gastro-Enterology and Proctology and the Section on Pathology and Physiology at the One-Hundredth Annual Session of the American Medical Association, Atlantic City, June 15, 1951.

From the Department of Medicine, Northwestern University Medical School, and the Liver Research Laboratory of St. Luke's Hospital (Dr. Capps); the Department of Pediatrics, University of Pennsylvania School of Medicine, and the Children's Hospital (Dr. Stokes).

1. (*a*) Cockayne, E. A.: Catarrhal Jaundice, Sporadic and Epidemic, Its Relation to Acute Yellow Atrophy of the Liver, Quart. J. Med. **6**: 1 (Oct.) 1912-1913. (*b*) Lichtman, S. S.: Diseases of the Liver, Gallbladder and Bile Ducts, ed. 2, Philadelphia, Lea & Febiger, 1949.

2. Henle, G.; Drake, M. E.; Henle, W., and Stokes, J., Jr.: A Skin Test for Infectious Hepatitis, Proc. Soc. Exper. Biol. & Med. **73**: 603 (April) 1950.

3. (*a*) Voegt, H.: Zur Aetiologie der Hepatitis epidemica, München. med. Wchnschr. **89**: 76 (Jan. 23) 1942. (*b*) Cameron, J. D. S.: Infective Hepatitis, Quart. J. Med. **12**: 139 (July) 1943. (c) MacCallum, F. O., and Bradley, W. H.: Transmission of Infective Hepatitis to Human Volunteers, Lancet **2**: 228 (Aug. 12) 1944. (*e*) Havens, W. P., Jr.; Ward, R.; Drill, V. A., and Paul, J. R.: Experimental Production of Hepatitis by Feeding Icterogenic Materials, Proc. Soc. Exper. Biol. & Med. **57**: 206 (Nov.) 1944. (*f*) Findlay, G. M.; Martin, N. H., and Mitchell, J. B.: Hepatitis After Yellow Fever Inoculation: Relation to Infective Hepatitis, Lancet **2**: 301 (Sept. 2) 1944; 340 (Sept. 9) 1944; 365 (Sept. 16) 1944. (*g*) Neefe, J. R.; Stokes, J., Jr., and Reinhold, J. G.: Oral Administration to Volunteers of Feces from Patients with Homologous Serum Hepatitis and Infectious (Epidemic) Hepatitis, Am. J. M. Sc. **210**: 29 (July) 1945.

and are discussed elsewhere.[17] The last type, however, which is probably much the commonest, constitutes the real problem. A large number of such epidemics have been described especially in connection with schools and various types of institutions, but with few exceptions the exact mechanisms involved have not been ascertained.[18]

From the preceding survey of the literature, it is obvious that for effective prevention and control more accurate information is desirable. We have recently had an opportunity to make a careful study of an unusual epidemic of infectious (epidemic) hepatitis which throws some light on these problems.[19] This report is concerned with the pertinent aspects of our findings and their possible application.

DESCRIPTION OF EPIDEMIC

The epidemic occurred in an orphanage for infants and small children under 3 years. The average census was 200, and about one-third were over 1 year and two-thirds were younger. The average hospital stay was four months, although there was considerable variability. In addition, 15 expectant mothers lived in the institution for three to four months prior to delivery. Thirty other deliveries were performed each month. Approximately 50 student nurses were trained each year. They were given a one-year course and were admitted quarterly.

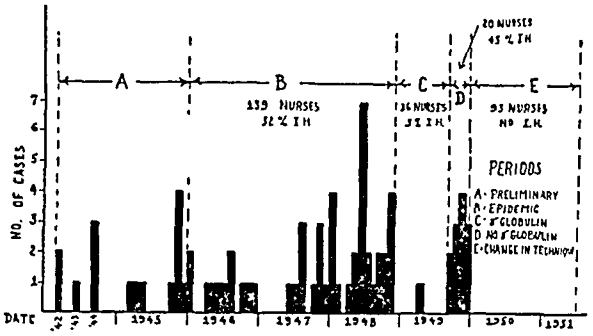

Fig. 1.—Monthly incidence of new cases of acute infectious hepatitis among adults, chiefly student nurses in a children's orphanage. Percentage of student nurses infected in each period is indicated. Note the complete abolition of new cases in period *E* resulting from the introduction of proper aseptic nursing technique.

Attention was first drawn to the situation because of the repeated appearance of acute hepatitis among student nurses. As depicted graphically in Figure 1, during the period from 1942 to 1949 the disease was recognized in 72 student nurses, in one new graduate nurse, one resident physician, and one maternity patient. The maternity patient, who had the infection in October, 1949, probably contracted it outside the hospital since she became jaundiced within 14 days after admission. In addition to these 75 cases, there were many other student nurses with a suspicious history, but the presence of jaundice could not be verified.

As indicated in the graph, the outbreak can be divided into several periods. During the preliminary period (*A*), the epidemic was becoming established. During the three-year period (*B*), the epidemic was flourishing, and the incidence of acute hepatitis with jaundice among the student nurses was 32%. In November, 1948, all nursing personnel were given gamma globulin (0.06 cc. per pound [0.5 kg.] of body weight), and for a 10-month period (*C*), all new students received a similar injection, usually within one month of entering training. During this interval only one case of hepatitis developed. This was in a nurse who, due to an oversight, had received gamma globulin only four days prior to the appearance of jaundice, obviously too late to be effective. During period (*D*) the administration of gamma globulin was discontinued. Twenty new student nurses were admitted in September, 1949, and in six acute hepatitis with jaundice developed and in three hepatitis without jaundice. In addition, during this period hepatitis developed in a new graduate nurse, in a student who had received gamma globulin 10 months previously, and in the previously mentioned maternity patient. In December, 1949, nursing technique was revised. The nurses were taught to wash their hands after touching potentially contaminated material and in general trained in aseptic technique. Masks were not worn at any time. During this period of 18 months (*E*), no further cases of hepatitis developed among the nurses.

Further analysis showed that 12 of the 75 patients with hepatitis became sick within less than 7 weeks after admission to the institution and 8 in less than 40 days. In 51 cases no mechanism for parenteral transmission could be discovered. In the remaining cases blood studies were made at the time of admission but the interval between these studies and the onset of hepatitis was suitable in only a few instances; the interval was less than 60 days in 11 cases and from 60 to 120 days in 5 cases. These data indicate that the disease had a short incubation period and that it was transmitted largely if not entirely by other than the parenteral route. It was therefore necessary to conclude that we were dealing with the infectious (epidemic) strain of viral hepatitis. This was further confirmed by the effectiveness of gamma globulin in preventing the disease during period *C* (fig. 1).

OBSERVATIONS ON THE CHILDREN

Commencing in October, 1949, serial clinical and laboratory observations were made on selected groups of children. During the ensuing 18 months, 42 cases of infectious hepatitis were diagnosed. Only those cases were accepted in which at least three different tests were positive for a minimum of four weeks and the clinical findings were consistent with liver disease. Abnormalities were

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4. (*a*) Pickles, W. N.: Epidemic Catarrhal Jaundice: An Outbreak in Yorkshire, Brit. M. J. **1**: 944 (May 24) 1930. (*b*) Evans, P.: Comments on an Epidemic of Hepatitis, ibid. **2**: 446 (Oct. 17) 1942. (*c*) Cullinan, E. R.: Epidemiology of Jaundice, Proc. Roy. Soc. Med. **32**: 933 (June) 1939. (*d*) Glover, J. A., and Wilson, J.: An Extensive Epidemic of Catarrhal Jaundice, Lancet **1**: 722, 1931. (*e*) Edmonds, H. W.: Recent Advances in Pediatric Pathology—Jaundice in Childhood, West J. Surg. **54**: 50 (Feb.) 1946. (*f*) Gauld, R. L.: Epidemiological Field Studies of Infectious Hepatitis in Mediterranean Theater of Operations: Clinical Syndrome, Morbidity, Mortality, Seasonal Incidence, Am. J. Hyg. **43**: 248 (May) 1946. (*g*) Cockayne.[1a]

5. Findlay, G. M., and Martin, N. H.: Jaundice Following Yellow Fever Immunization: Transmission by Intranasal Instillation, Lancet **1**: 678 (May 29) 1943. MacCallum and Bradley.[3c]

6. (*a*) Neefe, J. R., and Stokes, J., Jr.: An Epidemic of Infectious Hepatitis Apparently Due to a Water Borne Agent: Epidemiologic Observations and Transmission Experiments in Human Volunteers, J. A. M. A. **128**: 1063 (Aug. 11) 1945. (*b*) Havens, W. P., Jr.: The Period of Infectivity of Patients with Experimentally Induced Infectious Hepatitis, J. Exper. Med. **83**: 251 (March) 1946.

7. (*a*) Findlay, G. M., and Willcox, R. R.: Transmission of Infective Hepatitis by Feces and Urine: Preliminary Communication, Lancet **1**: 212 (Feb. 17) 1945. (*b*) Voegt.[3a] (*c*) MacCallum and Bradley.[3c]

8. (*a*) Findlay, G. M.: Infective Hepatitis in West Africa, Month. Bull. Min. Health and Pub. Health Lab. Serv. **7**: 2 (Jan.) 1948. (*b*) Havens, W. P., Jr.: Infectious Hepatitis, Medicine **27**: 279 (Sept.) 1948.

9. Francis, T., Jr.; Frisch, A. W., and Quilligan, J. J., Jr.: Demonstration of Infectious Hepatitis Virus in Presymptomatic Period After Transfer by Transfusion, Proc. Soc. Exper. Biol. & Med. **61**: 276 (March) 1946.

observed in the thymol turbidity and flocculation, cephalin cholesterol flocculation, ammonium sulfate turbidity, scarlet red flocculation, serum cholinesterase, serum alkaline phosphatase, cholesterol ester ratio, and quantitative urinary urobilinogen and coproporphyrin. A detailed analysis of the clinical picture and laboratory findings will be reported subsequently.[10c]

Although the diagnostic criteria employed were arbitrary, they were intentionally rigid and probably excluded all but the cases with markedly positive findings. The validity of the clinical diagnosis was amply confirmed by epidemiological studies and the results of skin testing[10b] and in two cases by the demonstration of virus in the feces by means of experimental oral inocculation of adult volunteers.[20a] The more important findings in a typical nonicteric case are shown graphically in figure 2. Horizontal lines represent normal values for this age. The symptoms in this case were loose stools, anorexia, failure to gain weight, and intermittent low-grade fever.

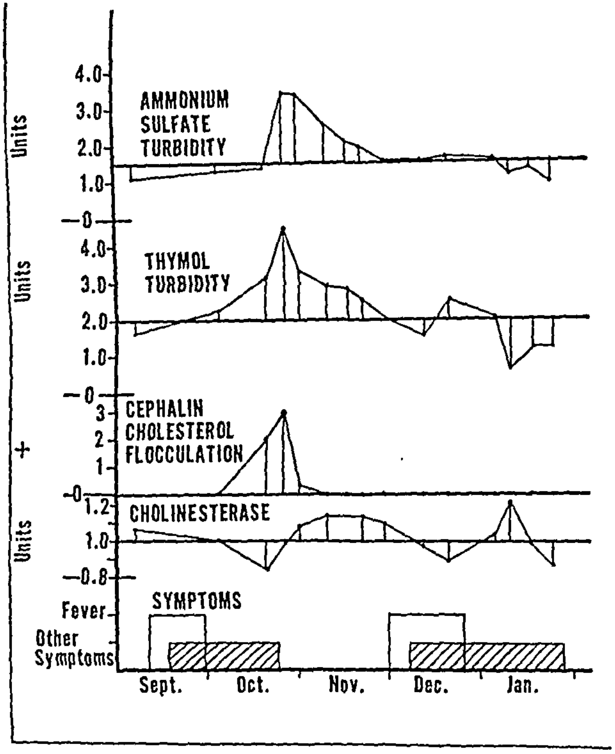

Fig. 2.—Findings in a case of infectious hepatitis in a 22-month-old white male infant. The laboratory findings and symptoms are typical. Horizontal lines represent normal values. The serum bilirubin was normal.

In 30% of the cases the disease persisted for more than four months, indicating a high incidence of so-called "chronic hepatitis." Suggestive epidemiological evidence was obtained that four of these chronic cases continued to be contagious for periods up to one year. It was in two of these chronic cases that the virus was demonstrated in the feces, thus confirming the existence of a carrier state. In one case virus was demonstrated to be present five months after the onset of illness and in the other case 15 months after the onset.

The total over-all incidence of disease could not be determined on the basis of clinical and laboratory findings because only certain groups were tested in a serial manner. However, an analysis of the result of skin testing indicated that 80% of children remaining in the institution for six months or longer had been infected with the virus. Obviously only a small percentage of the actual cases were diagnosed. Since jaundice and hyperbilirubinemia were observed in only 1 of the 42 clinically recognized cases, it would appear that the true incidence of jaundice in the total number of cases was probably less than 0.5%. Clearly the disease in the children was almost entirely of the nonicteric variety. These data also indicate that in some situations the disease in this age group is quite contagious. An important factor is that children over 6 months of age played together and, since they were usually not toilet trained, fecal contamination of bodies, clothes, and bed linen was common.

In figure 3 the monthly incidence is shown of new cases in children throughout the study period. Only 40 cases are shown, since two persons had the disease at the time of admission. Periods are indicated by letters, as in figure 1, except that period *E* has been broken down into several additional intervals. Cases in nurses have also been included for purposes of comparison. Period *E* indicates the change in nursing technique. Although

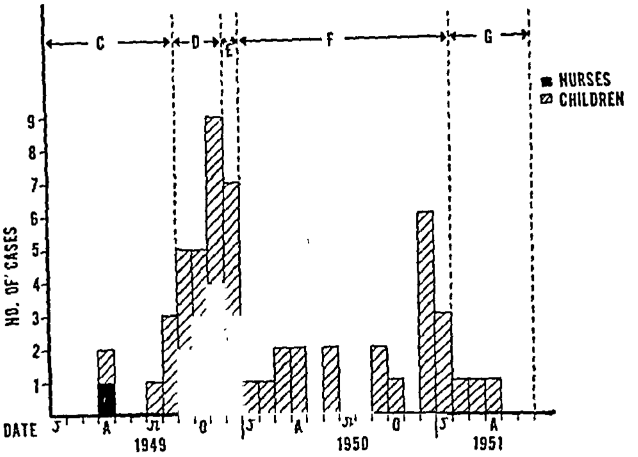

Fig. 3.—Monthly incidence of new cases of infectious hepatitis over two year period. Hatched columns represent infants and solid black columns nurses. Period *E* indicates change in nursing technique, *F*, isolation of all cases in children and *G*, elimination of the isolation. Note that the infection was eliminated among nurses but continued essentially unaffected among the infants.

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14. Fraser, R.: A Study of Epidemic Catarrhal Jaundice, Canad. Pub. Health J. **22:** 396 (Aug.) 1931. Gauld.[4c] Neefe and Stokes.[6a]

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there appeared to be a slight decrease in cases among the children, this fact is of doubtful significance. Period *F* indicates the establishment of isolation wards for all patients with active disease and for all patients who had recovered, respectively. Although these wards were maintained until February, 1951, the remaining children were carefully screened only through August, 1950. Thus isolation was seriously attempted for just six months. During period *G* the isolation wards were discontinued. As shown in the graph, neither the establishment or discontinuance of isolation had any significant effect on the outbreak. This was apparently due to difficulties involved in establishing the diagnosis in the children. Not only was the diagnosis probably overlooked in milder cases, but it could not be established early enough, even in cases in which a definite diagnosis was made, to remove the contagious child before he had infected others.

GAMMA GLOBULIN IN THE NURSES

During period *C* in figure 1, 36 student nurses were given gamma globulin, usually within one month after entering training. The girl in whom hepatitis developed in April, 1949, is not included in the 36 because the gamma globulin was obviously given too late to be effective. All of these 36 remained in the institution until the end of October, 1949, and most of them into 1950. All of these girls were exposed in the institution for at least five months prior to the change in nursing technique and in most cases considerably longer. Although the passive immunity conferred by the action of gamma globulin probably does not persist for as long as five months, in only one of these 36 girls did clinical hepatitis develop. This is to be compared with an incidence of 32% among student nurses prior to period *C* and an incidence of 45% subsequent to this period. The most probable explanation for this situation is that in these girls unapparent infection developed during the declining phase of the passive immunity as a result of exposure to the endemic disease in the children and thereby the nurses acquired active immunity.

MECHANISM OF THE EPIDEMIC

Detailed arguments regarding the mechanism of the epidemic have been reported elsewhere.[19a, b] The most significant data were as follows. 1. It was shown that the disease concerned was infectious (epidemic) hepatitis because of a short incubation period, absence of a mechanism for parenteral transmission, the effectiveness of gamma globulin as a preventative, and the production of disease in volunteers with an incubation period of 23 or 24 days using feces from sick children. 2. The possibility of transmission by contaminated food or water was eliminated because of the absence of disease among the maternity patients. These persons served as an ideal control for the student nurses, since they were in the same age group, ate the same food and drank the same water and, in some cases, lived on the same floor of the building. 3. It was rather conclusively demonstrated that the children were infected with the virus because of the clinical and laboratory findings indicating liver dysfunction, the evidence obtained from a specific skin test material, the epidemiological evidence of infection, and, finally, the demonstration of virus in the stools of two children through the use of adult volunteers. 4. The dramatic elimination of new cases among student nurses following the change in nursing technique in spite of the continued exposure of new student nurses to known active cases in the children demonstrated clearly that the children were serving as the infectious focus for the nurses. 5. Finally, it was clear that the spread of the disease from child to nurse must have been through direct and indirect contact and was not airborne. Although a similar form of spread probably occurred in the spread from child to child, this has not yet been settled.

COMMENT

Among the conclusions to be drawn from this study are several that have a special bearing on the problem of epidemic control. First, a naturally occurring epidemic of infectious (epidemic) hepatitis has been described in which nonicteric cases played a vital role in perpetuating the virus and keeping the infection alive. In fact, in this case the nonicteric acute cases and to an unknown extent the nonicteric "carriers" served essentially as a reservoir for the virus. Because jaundice was absent, these cases were unrecognized and the true nature of the epidemic was not understood for eight years. It is probable that a similar situation exists in other epidemics even among adults. Although in the latter case the incidence of nonicteric cases is not as high, nevertheless one of us (R. B. C.) has described an outbreak of infectious hepatitis in which nonicteric cases represented 91% of the total.[13c]

Second, previously accepted views as to the period of infectivity must be altered. In view of our findings all chronic cases must be considered as potentially contagious. In fact, one can no longer assume that the virus is present in the feces only during the first two weeks of illness, but patients must be considered as possibly contagious until they are clinically recovered.

Finally, it has been shown for the first time in a naturally occurring epidemic in which conditions were suitable that airborne spread did not occur. This, of course, was only demonstrated in the spread from child to nurse, although there is no reason to believe that it does not also hold in the spread from child to child.

The persistence and extent of this epidemic indicate the danger of this infection becoming epidemic or endemic in similar institutions or groups elsewhere. The

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19. (*a*) Capps, R. B.; Bennett, A. M., and Stokes, J., Jr.: Endemic Infectious Hepatitis in an Infants' Orphanage: I. Epidemiologic Studies in Student Nurses, A. M. A. Arch. Int. Med. **89:** 6 (Jan.) 1952. (*b*) Bennett, A. M.; Capps, R. B.; Drake, M. E.; Ettinger, R. H.; Mills, E. H., and Stokes, J., Jr.: Endemic Hepatitis in Infants' Orphanage: II. Epidemiologic Studies in Infants and Small Children, Arch. Int. Med., to be published. (*c*) Capps, R. B.; Bennett, A. M.; Mills, E. H.; Ettinger, R. H.; Drake, M. E., and Stokes, J., Jr.: The Clinical Picture and Diagnosis of Infectious Hepatitis in Infants and Small Children with Special Reference to the Non-Icteric Form, to be published.

20a. Stokes, J., Jr.; Drake, M. E., and Capps, R. B.: The Carrier State in Viral Hepatitis, to be published.

critical factors here were fecal contamination of hands and bodies because of the early age of the patients; opportunity for transmission by direct contact and by poor nursing technique associated with a well children's institution; occasional introduction of fresh cases from the outside, and the relatively slow turnover. In regard to the last factor, it is probably essential to have a hospital or group stay of at least three to four weeks because of the relatively long incubation period. Situations involving similar suitable conditions must obviously occur frequently in other institutions as well as nurseries, schools, and various other groups.

On the basis of our findings and data reported in the literature, it is possible to arrive at some conclusions regarding the best available measures for the prevention and control of epidemics of this disease. Since these will vary with the mode of spread, it is of prime importance that this be determined early. An epidemiological survey will usually provide at least a tentative answer. First, it is well to consider the possibility of parenteral transmission. Special attention should be given to the sterilization of syringes and needles and particularly lancets used for capillary puncture. Individually sterilized needles or knife blades should be used for the latter purpose. The multiple-dose-per-syringe method of giving vaccines and other medications must be avoided.[13c] Second, the possibility of fecal contamination of water, milk, or food must be investigated. Flies may be an important factor.[20] Control measures for outbreaks involving these modes of spread are obvious.

The third and probably commonest type of epidemic is that resulting from direct contact, as in the outbreak reported in this paper. Control measures are those commonly employed in other filth-borne diseases, namely, isolation of patients who are contagious and adequate sanitation. For the present, isolation must be based on the assumption that the contagious period begins with the onset of symptoms and lasts until clinical recovery has occurred. Although the virus may usually disappear from feces two weeks after the onset, it may persist in persistent or chronic cases. In suitable hospitals or institutions, isolation of all newly admitted patients for three weeks may be necessary. Sanitary measures must include proper nursing technique in institutions and adequate washing facilities in schools. Wash bowls with foot or elbow controls, individual towels, sufficient soap, and instruction regarding the washing of hands after defecation are desirable.

The effectiveness of such a program in controlling contact epidemics is closely related to the accuracy of diagnosis. This applies chiefly to the nonicteric cases, which are the ones that are usually unrecognized. Laboratory aid is important. Fortunately, such simple procedures as the thymol turbidity,[21] ammonium sulphate turbidity,[22] or one of the other flocculation or turbidity tests and tests for bilirubinuria [23] are reasonably reliable and suitable for mass use. Probably most adult cases can be recognized or at least suspected in this way, although the situation in infants is much less certain.

In some situations, however, the preceding measures are not completely effective due to various uncontrollable factors. Thus in the epidemic reported here, although the disease has been eliminated among the nurses, it is still present among the children. This is apparently because of the difficulties in diagnosis, especially early diagnosis, in maintaining cleanliness at this age, and in the presence of unrecognized "carriers." Obviously the most satisfactory and permanent solution to such a problem, especially in view of the danger of introducing new cases from the outside, lies in active immunization. Although no vaccine for this purpose is available at present, it would appear from this study that under certain circumstances the administration of gamma globulin may provide a similar result. These findings are discussed in detail elsewhere [10a] along with other similar data.[24] The difficulty with this method of active immunization is, of course, the need for exposure to persons with active disease. It was successful among the nurses who were constantly exposed, but it may fail with the children. Its value in the usual type of contact epidemic remains to be determined. This may well be one of the diseases that it is best to have in childhood.

SUMMARY AND CONCLUSIONS

An epidemic of infectious (epidemic) hepatitis among student nurses resulting from an endemic focus among children patients under 3 years is reported. It is clearly shown that transmission from child to nurse occurred only by the fecal-oral route and from child to child probably in the same manner. The disease in the age group under 3 years is generally without jaundice and may persist for six to eight months. Experimental evidence of a fecal carrier state of 5 to 15 months' duration was obtained through the use of adult volunteers. Prevention and control of epidemics in the light of available knowledge are discussed.

122 S. Michigan Blvd. (Dr. Capps).

20. Kirk, R.: Spread of Infective Hepatitis, Lancet **1**: 80 (Jan. 20) 1945.
21. Shank, R. E., and Hoagland, C. L.: A Modified Method for the Quantitative Determination of the Thymol Turbidity Reaction of Serum, J. Biol. Chem. **162**: 133 (Jan.) 1946.
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Progress in Disease Control.—The great plagues—bubonic, yellow fever, cholera, smallpox and typhus appear no longer in civilized countries. Malaria, typhoid and dysentery are steadily being eliminated, and the septic infections are under therapeutic control. A combination of two sorts of scientific work has brought about this result. On one hand there has been the combination of the objective study of clinical disease, the development of bacteriology and virology in the laboratories and the study in the field of how the pathogens survive in nature and how they are conveyed to their human hosts. On the other hand we have the less logical but even more effective approach by which a combination of accident, empiricism, the resources of modern chemistry and the American capacity for organized investigation, has provided agents with specifically lethal effects on this or that group of organisms which in one way or another restrict the fulfillment of human desires.—Frank Macfarlane Burnet, M.D., The Ecological Approach to the Common Virus Diseases of Today, *Bulletin of the Johns Hopkins Hospital*, February, 1951.

ESTATE PLANNING FOR PHYSICIANS

PART 4: PLANNING AS RETIREMENT APPROACHES

W. S. McClanahan, Chicago

This is the last in a series of articles developed for physicians who are interested in problems relating to economic security in their business and home activities.—ED.

In the third article[1] the situation of the physician in the middle years of his practice was examined, and some general principles of estate planning in this stage of life were stated. The various types of taxes that affect estate plans were explained and related to particular situations. Some of the commoner tools of the estate planning team were described in brief, including the settlement options in life insurance policies, insurance trusts, trusts created during life by agreement and at death by will, and the use of the marital deduction under the federal estate tax law.

It is the purpose of this last article of the series to analyze the family situation and financial status of the physician as he approaches the age of retirement from his chosen profession, and as he prepares to hand over the pleasures and privileges, as well as the duties and burdens, of the practice of medicine to his younger colleagues. The change in direction and the difference in emphasis of estate plans at this stage of life and practice will be explored and described briefly.

The situation of the physician approaching retirement presents a composite picture. There is no compulsory retirement in a profession and hence no generally accepted retirement age. Some physicians have acquired the means and the will to retire by the time they reach their late 50's; many are still happy and successful in active practice in their 70's. All sorts of personal, health, financial, and location factors affect this decision. Most young men starting out in a business or a profession promise themselves an early retirement, well in advance of industry's commonly accepted age of 65.[2] Few men achieve this goal of their youth, and, as retirement approaches ever closer, few of them still retain early retirement as a primary objective. In order to have a starting point for our discussion, the age of 65, common in business and industry pension plans, has been chosen arbitrarily as an average retirement age for physicians.[3]

With this arbitrary goal in mind, it may be well to analyze the situation of the physician as he approaches retirement. He will be somewhere in his middle 50's to middle 60's.[4] His children will now be married and self-supporting, and there may be several grandchildren who are increasingly in his thinking as he plans the disposition of his estate. His family expenses and responsibilities will have diminished as the children establish their own homes and careers.

His earnings will be at a high level compared to his earlier years. If he is in the younger years of the age bracket under discussion, his income may still be increasing toward its peak.[5] If he is in the later years of this age bracket, income will probably have passed the peak and started to decline,[6] as physical limitations require him to curtail his activities. In either case there will be considerable surplus income available for investment, because of the reduced family expenses. He will be more income tax conscious as higher earnings and lower family exemptions place him in ever higher tax brackets.

His property holdings will not only have increased in amount but will have broadened to include different types of investments. His home will now be fully paid for, and he may own city or farm real estate on an income-producing basis. The series E savings bonds, which were the foundation of his early investment program, will have matured and been replaced by bonds that pay interest regularly, such as series G or treasury coupon bonds. He may have added some good corporate bonds to his portfolio to increase his yield and, if he is in a high income tax bracket, may have been advised of the advantage of the tax free income on municipal bonds. The few small stock holdings and investment trust shares of early years may now be replaced with substantial share holdings in some of the nation's leading corporations. If he has followed the plan set up by his life underwriter, a number of his insurance policies may now be paid up and the mounting cash values of the others will make them look more like an investment and less like pure protection to him. If he has followed a sound financial plan through most of his business life, his estate will have grown slowly but steadily, and income from his investments will take on added importance as income from his practice declines.

PERSONAL ANALYSIS REQUIRED

With this very general picture in mind, what new or different steps should be taken, or what changes in direction and emphasis should be applied to existing plans, as the physician approaches retirement? First in importance will be a reappraisal of his purposes and objectives. Call it the adoption of a philosophy of life, if you wish. It is a prerequisite for any well-devised plan. It will require some active thinking and soul searching on the part of the physician and his wife. The professional advisers who have been through this scores of times may make suggestions, or open up new lines of thought, but the physician himself must think these questions through. Only

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Member of the *Illinois Bar and Assistant Vice-President*, Lake Shore National Bank.

Clarence E. Smith, A.B., C.L.U. (1931), Chicago, assisted in the preparation of these articles. He is Past President of the Chicago Chapter, Chartered Life Underwriters; Past President of Chicago Association of Life Underwriters; and a Life Member of the Million Dollar Round Table of the National Association of Life Underwriters.

1. McClanahan, W. S.: Estate Planning for Physicians: Planning for the Middle Years, The Successful Physician, J. A. M. A. **149:** 240 (May 17) 1952.

2. The age of 65, adopted in the *pension plans of industry* in the early 1900's, was followed as a pattern in thousands of private pension plans in the ensuing years and in the Social Security Act of 1935. Many economists, sociologists, and actuaries now question the wisdom of compulsory retirement at 65, as they note the *lengthening* life span of the American people, and that the number of persons aged 65 and over has quadrupled since 1900, while the population has doubled in the same period. It is estimated that by 1980 one out of every eight persons will be over age 65. Dickinson, F. G.: *Economic Aspects of the Aging of* Our Population, in Southern Conference of Gerontology: Problems of America's Aging Population, Gainesville, Fla., University of Florida Press, 1951; What Health Progress Means To Me, Miscellaneous Publication M-57, Bureau of Medical Economic Research, American Medical Association, 1950.

he can provide the answers that are absolutely essential for the next stages of his estate plan.

It may be well to set out some of the questions that will occur to the physician in this process of self analysis. At what age or in how many years from now will he actually be willing to cease active practice? Is he willing to cut the professional ties suddenly and completely, by simply locking the office door and going home for the last time? Is he still toying with the idea of "taking in a younger man" to share the work, allowing a gradual retirement as the young man grows in ability and experience? Is there a possibility of arranging a sale of the practice on some basis that will allow him to share in the income in the first few years of retirement? Are there long-dreamed-of research or writing projects or teaching assignments that may occupy the physician's time and bring a gradually reducing income in the early years of retirement?

What is the amount and the nature of the physician's accumulated property? What is the maximum and the minimum income that it can be expected to produce, in the ups and downs of economic cycles? What part of it may require little or no supervision or management (such as paid-up insurance, annuities, government bonds, and previously created trusts)? What part may require professional investment supervision (such as marketable bonds and stocks, investment trust shares, and mortgages)? What part may require active business management (such as city real estate, farms, and interests in going business enterprises)?

What is the current family situation and what will it probably be at retirement date? Does the health and family history of the physician and his wife indicate a normal life expectancy after retirement? Are the children well established in businesses or professions, or just getting started and in need of occasional assistance? What are the observed strengths and weaknesses in family members, as to ability to earn a living and to manage and conserve what they have? Has any family member (including the daughters' husbands) shown tendencies that indicate a need for trustee management of his or her share of the family property? Would a present gift of modest amount to a son or daughter just starting their career be far more helpful than a larger amount many years later (say after the death of both parents)? What changes in the physician's way of life may be expected at retirement? Is the family home to be sold and a smaller one purchased? Is there a plan to change the family residence to a distant state or city in some more equable climate? Might such a move place the physician in a "community property" state? What would be the effect of different state laws as to descent of property, and as to state income, inheritance, and gift taxes?

This is by no means a complete list of questions. An experienced and competent estate planner would ask these and many others.[7] A sound, well-devised estate plan is, first of all, an intimate personal and family plan. The information secured by the estate planner in answer to such questions is the warp and woof from which is woven the fabric of an individual estate plan. Insufficient information (or worse yet, wrong information) will almost surely result in a defective or unworkable plan. Such defects seldom show up until the death of the estate owner places the plan in operation, and it is then too late to correct them.

It is here that the art of estate planning enters its most useful field. The principal reasons for planning in the early years (disability and death) are still present, but the formerly remote reason (old age) has now taken priority in the thoughts of the estate owner. As the physician engages in the analysis of his personal, family, and financial situation, he will realize that the emphasis and direction of his thinking has changed with the years. He would probably now list his purposes and objectives in this order; (1) adequate retirement income for himself and his wife, (2) adequate, assured income for his wife in case of his prior death, and (3) transfer of the estate to the children or grandchildren upon the death of the surviving parent.

LIFE INSURANCE ANALYSIS

When the physician has determined the answers to the questions set out above and the others suggested by his professional advisers, he will be able to turn over the raw material with which his advisers can work. First he will consult with his life underwriter as to his insurance estate. If he has not done so previously, he should secure from his underwriter a detailed, written analysis of his insurance policies and annuities. These generally include an individual policy audit showing the premium, dividend if participating, cash and paid-up values, beneficiaries and mode of settlement. They also should show a premium calendar, a summary of guaranteed and paid-up values of all policies for a period of years and at retirement age, a summary of settlements to specific beneficiaries in terms of lump sum and monthly income and also monthly income available to the insured on each policy at retirement age. This material can be then be analyzed in detail with the underwriter and his recommendations secured, preliminary to making any changes indicated.

It may be advisable, at retirement, to have part or all of annual premium life insurance endorsed as full-paid for less than the face value and stop premium payments. However, because the options of settlement are more valuable in policies purchased when interest rates were higher and life expectancy was less than in those of recent issue, it is often advisable for premiums to be continued even though it becomes necessary to pay them from principal rather than income. Policies purchased more recently should be used to provide cash for family needs,

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3. Actually 13.2% of the physicians in independent practice in the United States in 1949 were aged 65 and over. These were divided as follows: 5.4% were aged 65 to 69, 4.3% were aged 70 to 74, and 3.5% were aged 75 and over. Weinfeld, W.: Income of Physicians, 1929-49, Survey of Current Business, United States Department of Commerce, (July) 1951.

4. Of the physicians in independent practice in 1949, 7.8% were aged 55 to 59, and 6% were aged 60 to 64.[3]

5. This will vary with size of community, geographic location, field and degree of specialization and personal factors. In several different sized communities and in the United States as a whole the highest average net income of physicians in independent practice in 1949 was reached between the ages of 45 and 49.[3]

6. In all sizes of communities and in the United States as a whole average net income had passed its peak and begun to decline by age 60 to 64.[3]

7. While these are personal questions to be answered largely from the individual's own experience, knowledge and desires, there is a growing body of literature on the subject of personal retirement plans that may be helpful to the physician. Preston, G. H.: Should I Retire? New York, Rinehart & Co., Inc., 1952; Ford, N. D.: Where to Retire on a Small Income, ed. 2, Greenlawn, N. Y., Harian Publications, 1951.

taxes, and administration expenses when needed. Also the income tax advantages to beneficiaries under life insurance options are so favorable that any reduction in the life insurance part of the estate should be carefully considered. If it becomes necessary to augment other income at retirement, the cash value of part or all of the life insurance can be paid out to the insured under the settlement options, by the terms of the contract or by company practice, with a considerable income tax advantage.[8]

If there are endowment policies maturing while the physician is still in a high income tax bracket, the amount by which the proceeds would exceed the cost in premiums paid would be taxed as ordinary income in the year of maturity. In order to avoid adding this income on top of earned income, it would be advisable to request that the cash values of the policies be placed under one of the dissipating or life income options prior to maturity. It should also be kept in mind that life insurance owned by the insured is included in the estate for federal estate tax purposes, and can be qualified to take advantage of the marital deduction, when this is advisable. All of these possibilities should be explored with the underwriter, but final action should be deferred until the entire estate has been analyzed.

PERSONAL BALANCE SHEET

The next logical step is the preparation of a "personal balance sheet" by the physician. This should be done with care and accuracy, for these valuations may have important tax consequences after retirement or at death. The accountant will be of valuable assistance in this study. Each asset should be scheduled to show both its cost to the physician and its current market value. Items which have appreciated substantially in value should be studied carefully. If a joint tenancy is involved, there may be a hidden capital gain that could result in unnecessary taxes for the surviving joint tenant. Perhaps a gift of the wife's interest in the joint property to the husband (if he paid the entire cost) would eliminate this possible capital gains tax.[9] There may be assets that have depreciated in value and could be disposed of, so that the loss could be used to offset the gains on other assets. Debts due the physician should also be analyzed and their collectibility estimated. Sometimes a write-off of a bad debt, if taken at the proper time, benefits the creditor taxwise. Debts owed by the physician should also be listed, and means provided for their payment. If there is a dearth of liquid assets for payment of debts, administration expenses, and taxes, it is often wise to make some of the insurance proceeds available to the executor for this purpose.

With this personal and financial information assembled, the physician will be ready to confer with the two estate planners who can best coordinate all of this rather diverse and complex data into a sound, integrated estate plan. These two are the lawyer and the trust officer. From this point on the combined judgment of these two advisers should be sought before any action is taken. Good estate planning cannot be done piecemeal, or in a vacuum. The method of disposition of any one item may have an effect on the methods of disposing of every other item. The next logical step is to have the lawyer and trust officer review and analyze the entire estate and the terms of the present will.

CONSIDERING ALTERNATE METHODS OF TRANSFER

These advisers will first estimate the probable value to be placed on each asset, for tax purposes. This is where sound, professional advice is needed, for it is the real market value at death that will be controlling, not the cost price or the estate owner's wishful thinking. From this total value, including the proceeds of the life insurance, will be deducted the estimated debts, taxes and expenses, which estate planners group under the heading of "estate shrinkage." This includes the debts of the decedent, expenses of last illness, funeral expenses, federal and state taxes of all types, and expenses of administration of the estate, including the fees or commissions of executors and attorneys. Of course these will vary from state to state and with the particular situation of the estate owner, but, for purposes of discussion, estate shrinkage may be assumed to vary from a minimum of 10% of the gross estate upward. In smaller estates, which are subject to minimum death taxes, if any, debts and expenses will usually exceed 10% of the gross estate. In larger estates debts and expenses may take a smaller percentage, but death taxes alone will account for an increasing percentage of the estate. The following figures, based on the "net estate," after debts and expenses, indicate the impact of taxes alone on larger estates:

Net Estate	Federal Estate Tax	Percentage of Net Estate
$ 100,000	$ 4,800	4.8%
200,000	32,700	16.4%
500,000	126,500	25.3%
1,060,000	325,700	30.7%

The total amount remaining, after deducting the estimated estate shrinkage, is the "net estate," and only this net amount can be considered in calculating the property and income available for the support of beneficiaries.

In order to evaluate the various methods of distribution or transfer, it should be kept in mind that "administration expense" or "probate expense" is generally a percentage of the value of the personal property that is subject to probate, that is, which passes under the will (or by the laws of descent if there is no will) to the dependents and other beneficiaries. Life insurance payable to named beneficiaries, joint tenancy property, trusts created during life, and real estate are excluded in calculating these expenses in most states.

Having arrived at a tentative value for the net estate under the present estate plans, the lawyer and trust officer will begin to calculate the effect of the many alternative plans and methods of estate transfer. It may be suggested to the physician that present gifts to the wife or the children would fit in well with his general objectives and

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8. The proceeds of life insurance payable to a named beneficiary under a dissipating or life income option are not subject to income tax. If an insured elects to have the cash value or endowment proceeds of a life insurance policy settled under a dissipating option, there will be no income tax until he receives back his total cost in premiums paid, after which all payments will be taxed as regular income. If he elects a life income option he will be taxed under the annuity principle, that is, he will be taxed on 3% of the cash value (or total premiums in case of a maturing endowment) until the total of the untaxed portions of the income equals the principal, after which all payments will be taxed as regular income.

9. An example of this situation was given in Part 3 of this series.[1]

effect important savings in both expense of administration and taxes. Perhaps this would be an appropriate place for the discussion of the federal gift tax, which was deferred from the previous article.

FEDERAL GIFT TAXES

Probably gifts during life were not an important factor in estate disposition until the adoption of the Federal Estate Tax Act in 1916.[10] Immediately thereafter estate owners began to explore every method of reducing death taxes, and, of course, gifts during life became one important method. That which a man had given away during life and no longer owned could not be taxed at his death (except to the extent that gifts "in contemplation of death" or "to take effect at death" were made taxable in the 1916 act). In the ensuing years the practice of making gifts of property during life, in order to avoid the impact of increasing death taxes, began to cause serious loss of revenue. In 1932 the Federal Gift Tax Act[11] was adopted to offset this loss. Except for changes in rates and exemptions, the pattern of the 1932 act has been continued to this date.

The gift tax is imposed on transfers of property "for less than an adequate and full consideration in money or money's worth."[12] The detailed rules for determining what is a gift, when a gift is completed, who is liable for the tax, valuation of gifts and other elements are too technical for discussion in the limited space available. Each person who makes any gifts (called the "donor") is allowed an annual exclusion for the first $3,000 that he gives to each person (called the "donee") in any calendar year. For example, suppose that a father gives $3,000 to each of his three sons in 1952, a total of $9,000; each gift is covered by the $3,000 annual exclusion for the son who receives it (the donee), and there is no gift tax payable. Suppose that he continued this program for 10 years, making the total of his gifts $30,000 to each donee (son), or a total of $90,000; each gift is covered by the annual exclusion allowed for each donee and hence no gift tax is incurred.

In addition to the $3,000 annual exclusion for each donee, the donor has a lifetime exemption of $30,000 for all gifts made by him. For example, suppose that a father had never made any previous gifts and he gives to his son $33,000 in 1952; the annual exclusion covers the first $3,000, the lifetime exemption covers the next $30,000 and hence no gift tax is payable. Having once used his $30,000 lifetime exemption, however, this is not available again in computing later gifts. For gifts made by married persons, the Revenue Act of 1948 added the marital deduction principle[13] to gift tax law. In effect this allows the spouse making the gift to use both his and the other spouse's annual exclusion of $3,000 and lifetime exemption of $30,000, thus doubling these deductions. To achieve this advantage the other spouse must join in making all gifts and gift tax returns for that calendar year. For example, suppose that the father in the previous case gives $66,000 to his son in 1952, and has his wife join with him in making the gift and the gift tax return; there will be no gift tax payable. In subsequent years the annual exclusion will continue to be $6,000 for each donee, so long as the wife joins in the gifts. It is not necessary that the wife own any interest in the property given, as the marital deduction principle still applies.

For an estate owner with substantial property holdings, the making of gifts may have several tax advantages. In the first place it increases his total exemptions from death and transfer taxes. He has only one exemption of $60,000 under federal estate tax law, but when he takes advantage of the $30,000 exemption under gift tax law, he has exempted a total of $90,000 of his property from taxation. In the second place, he has an annual exclusion of $3,000 for each donee, and a program of making gifts over a period of years can exclude substantial amounts of his property from taxation. In the third place, the gift tax rates are only three-fourths of the estate tax rates in any given bracket, thus effecting a one-fourth saving, even after he has used up his gift tax exemptions. In the fourth place, it should be noted that the first gift tax paid by an estate owner would be at the lowest rate in the gift tax tables. If this same property were retained until death, it would be taxed at the highest estate tax rates applicable to his estate. For example, suppose an estate owner has used up his gift tax exemption and annual exclusion and still has an estate of $200,000. If he should make a gift of $20,000 in 1952, he would pay a gift tax of $1,200 (the tax rate on the top $10,000 block of the gift is 8¼%). In reducing his estate by $20,000 he would reduce his possible estate tax at death by $6,000, (the estate tax rate on the top $20,000 block in this estate would be 30%). In this example, the making of a gift during life would effect an over-all tax saving of $4,800 and would increase the total property to be received by the beneficiaries by this same amount. A fifth advantage of lifetime gifts is that the property given would not be subject to administration at death, and hence the administration expenses would be reduced. It should be noted that in many situations a gift during life may also effect important income tax savings. If the person who receives the gift (the donee) is in a lower income tax bracket than the donor (the usual case), the income from the property given would be of more benefit to the donee.

A WORD OF CAUTION ABOUT GIFTS

With this explanation of the advantages of gifts during lifetime as one means of estate transfer should be added a word of caution for both the physician and his advisers. Gifts are a valuable device in estate planning and can accomplish many desirable purposes in addition to tax savings. But the gift device should be used with great care. It is like major surgery, to be resorted to only when all circumstances indicate that less drastic measures will not accomplish the desired result. In order to be effective for tax purposes the transfer must be a completed gift. This means that the estate owner (donor) must so effectively divest himself of title, ownership, and control of the property given that there is no possibility of getting it back. It cannot be a gift in form only, or with strings attached. The estate owner contemplating a gift should make it only after a thorough analysis of his entire estate with his lawyer and trust officer. He should ask himself whether, under the most adverse future circumstances (such as economic depression, unforeseen expenses, or drastically reduced income) the property to be given, or the income from it, might be necessary for the support of himself and his wife. If the answer to this question is yes, then the gift should not be made. In the larger estates gifts are frequently advisable, but they should be made only as part of a sound over-all plan of estate transfer and with competent professional advice. In the smaller estates gifts are seldom advisable, as the risk of future regret far outweighs the modest financial advantage gained.

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[10] U. S. Internal Revenue Code, sec. 810.

[11] U. S. Internal Revenue Code, sec. 1000.

[12] U. S. Internal Revenue Code, sec. 1002.

[13] This principle was explained in Part 3.[1]

LIVING TRUSTS

In planning for retirement one of the most useful devices for the professional man is the "living trust." This is a term used in estate planning to describe a trust created by an estate owner (called the "grantor") during his lifetime, effective immediately, and generally for his own benefit during life. Frequently the trust continues for the joint lives of the husband and wife, with income payable to them for life and, at the death of the survivor of them, the trust property is distributed to persons named in the trust agreement. The trust can continue after their deaths for the benefit of children or grandchildren if desired. Such trusts are usually made "revocable," that is, they may be changed, amended, or revoked by the grantor at any time prior to his death.

No tax advantage is sought or gained in this type of trust, but there are other equally important advantages. Since the trust is revocable, the trust property is still subject to the control of the grantor during life and is included in his estate for tax purposes at his death. The income of the trust is still taxable to the grantor during life. One of the principal advantages of the living trust for the physician approaching retirement is the freedom from the burden and worry incident to management of property and investments today. The specialized, professional services of the bank or trust company are made available in the supervision of the property and securities in the trust. Custody of securities, records, bookkeeping, receipt of income, collection of principal, investment analysis, advice, review and supervision, and purchase or sale of securities become the concern of the trustee. The grantor may retain the right to direct the investments on recommendations of the trustee, or may delegate full responsibility to the trustee. The physician is left free to travel, to follow a long-dreamed-of hobby or avocation, or to reside in a new location far from his former home and practice, with the assurance that his property is receiving continuous, fulltime management by a staff of skilled men with long experience in investment supervision.

It is frequently said in estate planning that a living trust is a "trial will." The grantor can observe how his trustee manages the property, its investment policies, its handling of relations with beneficiaries, the adequacy of the powers granted in the trust agreement, the flexibility of the plan as conditions change, and the abilities of the children or other future beneficiaries in managing their own affairs. He can make changes in his trust plan until the arrangement is working to his satisfaction, and then allow the terms of the trust agreement to distribute his property at death, in lieu of his will. (This does not mean that he needs no will, as there are generally assets outside the trust to be distributed by will.) Some of the advantages of having the bulk of the estate distributed under a living trust are avoidance of the publicity of a will, which is a public document when filed in court; reduction in probate expense; a plan already in operation and running smoothly prior to death; no delays in locating and organizing assets; no interruption in the regular flow of income to the wife or children at death; and an experienced trust organization whose staff is already acquainted with the family and its problems and has the confidence of the family members.

OTHER TRUST SERVICES

The physician approaching retirement will be well advised to consider seriously the value of a living trust for himself and his family. Both the lawyer and the trust officer who would manage his trust should be consulted. For the physician who does not wish to enter into a formal trust agreement and transfer his property to the trustee, the banks and trust companies have developed a service that offers many of the same advantages, called "agency service." As the name implies, the bank acts as fiscal agent for the physician, handling all the time-consuming details in the custody and record keeping of his securities. The principle differences are that the owner retains title to his property and securities, no investment changes are made except on the written direction of the owner, and the agency agreement is automatically terminated at death; hence it cannot serve in lieu of a will to distribute the property at death. Within the past several years another service of the trust institutions has become increasingly popular with professional men. This is frequently referred to as a "supervised agency" or "managing agency," and combines all of the attractive features of a simple agency account with the investment supervision features of a living trust. The quality of the investment analysis, review, and continuous supervision service is exactly the same as the bank gives to trust accounts in which it has full responsibility. Investment recommendations are submitted periodically by the bank but changes are made only on the written direction of the owner. Many professional men utilize this service, since it gives them the professional investment analysis and advice they need but allows them to retain control of the general policies and specific selections of their investments. This arrangement helps the physician to keep abreast of current economic conditions and acquire by contact a broader experience in this field.

As he approaches retirement the physician will be thinking principally of those years just ahead, when he can take leave of his profession and indulge in the rest and travel and hobbies and civic activities for which he could never find time during his active practice. He will be more concerned with present problems, with the protection of his estate from immediate hazards, with an adequate and assured income for himself and his wife in retirement, with the sale of his large house and the building of his "dream cottage." The several services of his bank and his life insurance company that will help to preserve his estate and assure him a dependable income in retirement will be of primary interest in the last few years of his practice.

BASIC PLANS

These concepts will occupy a major part of the physician's thoughts and plans, but behind these will always be his basic long-range plans. The hazard of death is not only still present, but it is gradually drawing closer. With all the plans and actions for use of the property during life, the underlying reason and motive for all estate planning remains the transfer of property to the next generation at death. At some date in the near or distant future death will intervene and set in motion the chain of events that will effect this final transfer. As was pointed out in an earlier article, the death of the estate owner is only one link in this chain, and the death of the wife is the other link. Both events must be considered together in any sound plan designed to transfer the largest amount of property to the children or grandchildren, with the least shrinkage enroute. This brings us back to one of the fundamentals of the young man's first plan: everyone should have a will. That is still true as retirement approaches. The will is the core and central document of most estate plans. Even though the owner has used other methods of estate transfer, the will is generally the principal conduit through which the estate passes at death.

Realizing this, the physician and his advisers will put not less but more thought into the periodic reviews of the plan and the will as retirement approaches. There are several good reasons for this. First, there will be a larger accumulation of property on which the will operates. Because of this the effect of taxes and expenses will be greater and the need to minimize them by careful planning more acute. Next, the experience acquired by the physician through making and revising earlier plans and wills should now make him better able to choose and adopt the plans best suited to his changing needs. The methods of transfer of property best suited to each beneficiary, whether directly or in trust for them, will receive careful consideration. The administrative clauses of the will, those which grant powers to the executor and trustee, and set up the framework within which they will administer the estate, will be revised and amplified, creating more flexibility to meet unknown future conditions.

THE BANK OR TRUST COMPANY AS EXECUTOR

As the physician approaches retirement he will probably give more thought to the choice of his executor and, if a trust is created in the will, to the selection of his trustee. In his earliest will he may have appointed his wife executor and, since the estate was small and the plan simple, this was a satisfactory choice. In later years, as property accumulated and problems became more complex, he may have realized that this "vote of confidence" in his wife was not only not good business judgment but was also unfair to his wife in placing a needless burden on her at a time of great emotional shock and stress. He may then have turned to a relative, or a professional colleague, or his lawyer to assume this important duty. Perhaps at some time during his career the physician has been called on to act as executor or administrator of the estate of a relative or professional colleague. If so, he will have a clearer concept of the qualifications and duties required to be a good executor. Few physicians can spare the time and effort required to do a good job as executor without serious interference with their practice and their own business affairs. That is one of the principal reasons why more and more are turning to the banks and trust companies to perform this important and highly specialized task for their estates and their families.

As the business of administering estates and managing trusts has increased in complexity, the banks have broadened their services and trained their staffs to meet these responsibilities. Probably the key to the more efficient work of the banks than of individuals in this field is "group judgment." State and national bank laws require a committee organization that vests responsibility in groups rather than individuals, and places the final responsibility for policy and major decisions on the board of directors. With such an organization in existance and its members trained and experienced, the banks can bring to the administration of an estate or trust qualities that even the wisest and most sincere of individuals cannot offer. These qualities include permanence, continuity, trained staffs, fulltime attention, experience, research facilities, financial responsibility, and impartiality. Being in this field, I have a natural prejudice in favor of the corporate executor and trustee. I have seen them work for several years, and seldom have I seen a situation in which an individual could have performed as well as the banks have done. The proof of this performance is the increasing acceptance of their services by business and professional men. As the physician reviews his estate plans at this stage, he should consult his lawyer especially about the choice of an executor and trustee. If he has lingering doubts or the all too common view that "trust services are only for the wealthy—I can't afford them," he should talk to his banker and trust officer about costs. He will find any trust man willing to discuss costs frankly, in confidence, and without obligation.

If the physician lives in a community where trust facilities are not available locally, he may still avail himself of these services without much inconvenience. Unfortunately there are many cities and towns where the banks have not gone into this field, but there are few centers of population in America that are more than one or two hours' drive from a city that has a trust institution. It is not necessary that an executor or trustee be located in the same city as the estate owner or the beneficiaries in order to give efficient administration of an estate or trust.

THE INDIVIDUAL AS EXECUTOR

If, after weighing all the pros and cons, the physician decides upon an individual as executor, there are certain principles that he should have in mind as he makes his selection. First, he should choose a person younger than he is, for the obvious reason that the younger person will probably outlive him. Second, he should choose a person in whom he has complete confidence, not only as to his honesty, integrity, business ability and judgment, but also as to his personal qualities of fairness, impartiality, human kindness, understanding, and willingness to devote to the task such time and effort as may be required, even at some sacrifice of personal interests. Third, he should by all means secure the prior consent of the person selected before appointing him. Fourth, he should recognize the fact that an individual executor may die or become ill or move away or otherwise become unable or unwilling to act before the estate is administered, and he should select and appoint an alternate or successor executor to act in this event. Lastly, (and this applies to corporate as well as individual executors) he should grant in the will ample powers to his executor to administer the estate efficiently. In most states the powers granted by law to executors are somewhat limited, often requiring court approval of many administrative acts, which may increase the expenses and fees. It is now common to grant several specific and general powers to the executor in a will, thus avoiding extra court work and expense. Many of these powers are not used in the ordinary estate but, if a complex situation arises, the possession of adequate powers is invaluable. If the executor has the full confidence of the physician, there should be no hesitation in granting adequate powers to act.

THE FIRST FUNDAMENTAL

As the physician approaches retirement and looks back over the years of his practice, he will realize that his last estate plan should be his best plan. Each change made through the years has been motivated by a change in family or financial status, or by newly acquired knowledge and experience of the physician and his advisers. The fact that life insurance, property, investments, wills, trusts, and other parts of his plan require change from time to time should not disturb the estate owner. This does not mean that an earlier plan was not a good one. Rather it means that the estate owner and his advisers have performed their tasks well. Rigidity in an estate plan may be one of its worst faults. If an analogy may be drawn from the physician's own field, when the clinical findings change, the physician places his patient on a different regimen. It is so with estate planning. Which brings a return to the first fundamental: estate planning is a continuing activity that ends only when the estate owner and his dependents are gone from the scene.

As I bring this series of articles to a close, I cannot refrain from straying a little outside my main theme. This discussion has been confined to financial matters, the accumulation of property and the conservation of values, and the assurance of regular income for personal and family needs, things that might be called the necessities of life or creature comforts. There is another side to personal and family planning for retirement and for eventual death. It might be called the psychological and spiritual planning and preparation for these major changes in the life of a family group. It is more ethereal than dollars and cents in estate planning, but, in the long run, it may be equally important. It is often said that a person must retire to something and not from something, that happiness in retirement is conditioned by the intelligent use of the leisure thus acquired. With the growth of retirement plans in industry and the increasing longevity of our population, this problem is receiving increased attention by many persons and groups.[14] It would be worth while for the physician approaching retirement to turn his thinking in this direction and begin to plan for his avocation, his hobby and the use of his well earned leisure hours, as well as for his economic welfare and security.

605 N. Michigan Ave.

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[14] Footnotes 2 and 7. Lerrigo, C. H.: Better Half of Your Life: How to Live in Health and Happiness from 40 to 90, New York, The John Day Company, Inc., 1951. Peck, J. H.: So You're Going to Retire, Sat. Eve. Post **221**: 34 (April 9) 1949.

CLINICAL NOTES

DEATH FOLLOWING "TEST DRINK" OF ALCOHOL IN PATIENTS RECEIVING ANTABUSE®

Marvin C. Becker, M.D.
and
Gilbert Sugarman, M.D., Newark, N. J.

In 1948, after observing the severe symptoms that followed the ingestion of alcohol in patients taking tetraethylthiuramdisulfide (antabuse®), Jacobsen and Hald, of Denmark, conceived the idea that this drug might be useful in the treatment of chronic alcoholism.[1] These investigators, associated with Martensen-Larsen and other co-workers,[2] subsequently reported in some detail the chemistry and pharmacology of tetraethylthiuramdisulfide and their clinical results with 83 patients under treatment with this drug. These studies were received with much interest by the lay and medical press, and, as a result, clinical investigation spread to other countries, such as Sweden, England, Canada, and, finally, the United States. The significant information available has been reviewed by Glud,[3] Dale and Ebaugh,[4] and again by Jacobsen and Martensen-Larsen.[5] Some of the short-term results have been promising, but long-term studies are still being anxiously awaited. It seems timely to temper the current trend of enthusiasm by highlighting a case in which death followed a "test drink" of 1 oz. of whiskey (15 cc. of alcohol) in a patient under initial tetraethylthiuramdisulfide therapy. As far as we have been able to determine, this is the first death in the United States to be reported. Only two previous deaths attributable to tetraethylthiuramdisulfide have been reported in the foreign literature.

REPORT OF A CASE

G. J., a white man, 49, who had been a chronic alcoholic for approximately 30 years, was first seen in May, 1951, with a desire for the "new Danish treatment" for alcoholism, which he had read about in the newspapers. After the tetraethylthiuramdisulfide treatment was explained, including its dangers, the patient still insisted on proceeding with the therapy. On May 28, 1951, after a week of sobriety, he was admitted to the hospital for complete study. There was nothing contributory in the past his-

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From the Beth Israel Hospital.

The tetraethylthiuramdisulfide (antabuse®) was supplied by Ayerst, McKenna & Harrison, Ltd., under whose auspices clinical investigation of the drug is now being conducted in this country.

[1] Hald, J.; Jacobsen, E., and Larsen, V.: The Sensitizing Effect of Tetraethylthiuramdisulphide (Antabuse) to Ethylalcohol, Acta pharmacol. et toxicol. **4**: 285, 1948.

[2] Hald, J., and Jacobsen, E.: A Drug Sensitizing the Organism to Ethyl Alcohol, Lancet **2**: 1001, 1948. Asmussen, E.; Hald, J.; Jacobsen, E., and Jørgensen, G.: Studies on the Effect of Tetraethylthiuramdisulphide (Antabuse) and Alcohol on Respiration and Circulation in Normal Human Subjects, Acta pharmacol. et toxicol. **4**: 297, 1948. Hald, J., and Jacobsen, E.: The Formation of Acetaldehyde in the Organism After Ingestion of Antabuse (Tetraethylthiuramdisulphide) and Alcohol, ibid. **4**: 305, 1948. Larsen, V.: The Effect on Experimental Animals of Antabuse (Tetraethylthiuramdisulphide) in Combination with Alcohol, ibid. **4**: 321, 1948. Asmussen, E.; Hald, J., and Larsen, V.: The Pharmacological Action of Acetaldehyde on the Human Organism, ibid. **4**: 311, 1948.

[3] Glud, E.: The Treatment of Alcoholic Patients in Denmark with "Antabuse," with Suggestions for Its Trial in the United States, Quart. J. Stud. Alcohol **10**: 185, 1949.

[4] Dale, P. W., and Ebaugh, F. G.: Antabuse Therapy in Chronic Alcoholism, Am. J. M. Sc. **220**: 103, 1950.

[5] (a) Martensen-Larsen, O.: Treatment of Alcoholism with a Sensitizing Drug, Lancet **2**: 1004, 1948. (b) Jacobsen, E., and Martensen-Larsen, O.: Treatment of Alcoholism with Tetraethylthiuram Disulfide (Antabus®), J. A. M. A. **139**: 918 (April 2) 1949.

tory except an episode of esophagitis approximately six months previously, which had occurred after a prolonged drinking bout. Physical examination revealed only the following abnormalities: telangiectasia of the face, two spider angiomas on the anterior thorax, arteriovenous nicking on ophthalmoscopic examination, blood pressure recordings varying from 160/90 mm. Hg to 180/110 mm. Hg, and a slightly enlarged prostate gland. Roentgen studies of the chest and gastrointestinal tract revealed no abnormalities, except for slight irregularity of the esophagus suggestive of esophagitis. An electrocardiogram and exercise tolerance test were normal. Complete blood studies, kidney function studies, liver function tests, and blood chemistry studies, including a dextrose tolerance test, were all well within normal limits.

After this investigation, which revealed essentially a normal condition, except for the mild labile hypertension, the patient received the following dosage of tetraethylthiuramdisulfide: 2 gm. the first day, 1.5 gm. the second day, 1 gm. the third day, and 0.50 gm. the fourth day. On the fourth day at 1:00 p. m. the first test dose of 1 oz. of whiskey was given under the strict supervision of a physician. A nurse was also in constant attendance. The initial blood pressure was 180/110 mm. Hg, the pulse rate 84; and the respiration rate 12 per minute. Within five minutes the expected reactions of an acetone odor to the breath, progressive flushing of the face and body, and conjunctival injection occurred. The blood pressure dropped slightly, the pulse rate was now 100, and the respiration rate was 20 per minute. Within 15 minutes there were complaints of nausea, palpitation, and shortness of breath. The blood pressure was 110/60 mm. Hg, the pulse rate 108, and the respiration rate 28 per minute. Five minutes later profuse diaphoresis, waxen pallor, and marked belching developed; oxygen was then administered by mask. At 1:25 p. m. the patient was in a state of collapse, with a blood pressure of 86/50, a rapid, thready pulse and a respiration rate of 28 per minute. An intravenous infusion of 5% dextrose in isotonic sodium chloride solution was started, and the bed was placed on shock blocks. The next 40 minutes provided a harrowing experience for the patient and physician. During this time epinephrine (adrenalin®) phenylephrine (neo-synephrine®) hydrochloride, and all other methods of combating shock were administered. By 2:15 p. m. the patient seemed to be responding, and by 2:30 p. m. he was definitely out of shock. The diaphoresis was gone, the blood pressure was 120/70 mm. Hg, the pulse rate 80, and the respiration rate 18 per minute. At 3:00 p. m. (two hours after administration of the test dose) the patient vomited; this was followed by a marked improvement in the sense of well-being. The color was good, the heart sounds were of good quality, and the lungs were clear; the blood pressure was now 140/70 mm. Hg, the pulse rate 84, and the respiration rate 16 per minute. The patient said, "Go on home; I feel fine," turned on his side, and fell asleep. A private nurse still remained in constant attendance, and his condition remained good until 5:30 p. m. (four and one-half hours after the ingestion of whisky), when the patient suddenly turned on his back, became pale and dyspneic, and ceased breathing. All attempts at resuscitation, including use of oxygen, artificial respiration, intracardiac injection of epinephrine, and cardiac massage were unsuccessful. An autopsy, which included examination of the brain, was performed one hour after death.

Autopsy Findings.—Gross and microscopic study of the organs revealed the following abnormalities, none of which could account for the patient's death: (1) hypertensive and arteriosclerotic heart disease, with cardiac hypertrophy and narrowing of the right coronary artery; (2) benign nephrosclerosis; (3) arteriolosclerosis of the liver, thyroid, and lungs; (4) pulmonary emphysema and fibrosis; (5) mild atherosclerosis of the pulmonary artery; (6) mild fatty degeneration and focal neutrophilic infiltration of the liver; (7) bilateral diffuse hyperplasia of the adrenal cortex; (8) marked muscular hypertrophy of the esophagus and mild acute esophagitis; and (9) mild nodular hypertrophy of the prostate.

COMMENT

The action of tetraethylthiuramdisulfide is based on its property of oversensitizing the body to alcohol. When a person takes a certain amount of tetrathylthiuramdisulfide and then consumes alcohol, an excess of acetaldehyde is produced in his body. This "acetaldehyde syndrome" initiates a chain of rather unpleasant and at times alarming symptoms. After several test drinks of alcohol the patient is placed on a maintenance dose of tetraethylthiuramdisulfide. The disagreeable memory of these "experience sessions" and the fear of a recurrence of these symptoms are the motivating forces conditioning the chronic alcoholic against drinking. The exact physiological action of the drug is unknown, but at present research seems to indicate that the drug acts as an antioxidant in the body, with more or less specific action on alcohol and its derivatives.[6]

Briefly, the main signs and symptoms, which begin five minutes after ingestion of alcohol, consist of flushing of the head and neck, spreading downward later to cover the entire body. This is accompanied by a sensation of warmth and sweating. There is a hyperemia of the conjunctivas, dyspnea, hyperpnea, dizziness, severe headache, tachycardia, and a fall in blood pressure. The patient often complains of palpitation, marked difficulty in breathing, and chest pain. Later he becomes nauseated, often vomits, and then falls asleep. More violent reactions are not infrequent. There may be convulsions, unconsciousness, and collapse. These reactions are very alarming to the patient as well as to the physician administering the treatment. The response to similar doses of alcohol in the same patient at different test periods is variable and unpredictable. Sensitivity to alcohol often increases with repeated medication.[5b]

Reports of Toxicity.—Ferguson [7] was among the first to point out that the reactions following ingestion of alcohol during tetraethylthiuramdisulfide therapy were much severer than previous reports had led one to suspect. He observed that once the reaction had started there was no certain method of controlling it and that under certain circumstances this reaction might constitute a real danger to life. These observations were confirmed by the work of subsequent investigators. Brown and Knoblock [6] state: "The treatment regime is potentially dangerous in that the antabuse-prepared patient is subject to developing acetaldehyde in amounts sufficient to produce an acute, severe vascular collapse whenever he drinks alcohol." They determined through experience that a patient should not be given more than 60 cc. of whiskey or its alcoholic equivalent in other beverages. Any amount in excess of this intensified the reaction up to a point of shock. In such cases it was found that the administration of oxygen usually promptly relieved these symptoms and at times was lifesaving. "The most dramatic and alarming features of such patients were the rapid fall in both systolic and diastolic pressure along with a rapid, thready pulse accompanied by cyanosis and other signs of vasomotor collapse."[6] Thimann [8] noted that in some of his patients apparently oversensitive to the drug, the ingestion of 8 to 16 cc. of alcohol caused circulatory collapse, rendering the patient pulseless, cyanotic, and unconscious. All his patients were healthy and had passed a rigid physical examination before being given tetraethylthiuram-

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6. Brown, C. T., and Knoblock, E. C.: Antabuse Therapy in the Army: Preliminary Report of 50 Cases, U. S. Armed Forces M. J. **2**: 191, 1951.

7. Ferguson, J. K. W.: Antabuse, editorial, Canad. M. A. J. **60**: 295, 1949.

8. Thimann, J.: Review of New Drug Therapies in the Treatment of Alcoholism, New England J. Med. **244**: 939, 1951.

disulfide therapy. This, combined with a specialized medical and nursing staff, he writes, "explains the fact that there have been no fatal accidents to date." Linden [9] reported a case in which death nearly occurred in a 56-year-old man undergoing tetraethylthiuramdisulfide therapy who had taken a moderate amount of alcohol. He had convulsions, was cyanotic, and moribund. The electrocardiogram revealed a 2:1 auricular flutter. Recovery was complete in two hours.

Two deaths have been reported in the foreign literature prior to the one reported here. Jones [10] was the first to report a death in Canada. This occurred in a 29-year-old ex-soldier, whose pretreatment physical examination findings were essentially normal. On the fifth morning following tetraethylthiuramdisulfide medication in the usual dosage, he was given only 1 oz. of rum (13 cc. of alcohol). Two hours after a very stormy course the patient seemed well and was sleeping. The pulse rate was 84 and the respiration rate 24. Twenty-five minutes later the patient ceased breathing and was pulseless and cyanosed; all attempts to revive him failed. Postmortem examination "left no doubt as to the cause of death, namely, an acute congestive right-sided cardiac failure, but gave little indication as to why this cardiac failure should have occurred."[10] It was conjectured that a high acetaldehyde level might have been the cause.

Jacobsen and Martensen-Larsen [5b] cite a case in which tetraethylthiuramdisulfide was given to a 60-year-old man in the middle of a heavy drinking period. He kept drinking, became unconscious, collapsed, and died the next day. About such an experience these authors mildly comment, "This shows that it is inadvisable to treat such patients as outpatients." Glud [3] mentions two cases reported in Denmark in which death occurred in patients with diabetes and later states that the relationship of the tetraethylthiuramdisulfide therapy to the deaths is open to question. In a study of 10 diabetic patients receiving tetraethylthiuramdisulfide therapy, no ill effects were noted on their well-being, blood sugar levels, or diabetic control.[11] We, therefore, do not attribute these two deaths directly to the treatment.

Glud [3] suggests that great care be exercised in the administration of tetraethylthiuramdisulfide to patients with (1) myocardial failure or coronary disease, (2) cirrhosis of the liver, (3) chronic or acute nephritis, (4) epilepsy, (5) goiter, (6) pregnancy, (7) drug addiction, (8) diabetes mellitus, (9) asthma, or (10) disease of the hemopoietic system or to those using paraldehyde. On the other hand, Glud's conclusions, based on about 10,000 cases, are that "antabuse is a relatively safe drug provided care is taken in its administration and precautions are observed." He also felt it was probable that as experience was gained many of the precautions and laboratory checks that are now essential may be dispensed with. Jacobsen and Martensen-Larsen [5b] are even less cautious than Glud and state that "no absolute contraindications have been seen thus far" and that perhaps "some caution is necessary in persons with heart failure." They go on to say that "among our patients we have several with cirrhosis, arteriosclerosis, diabetes or stomach ulcers. The treatment has not had any vicious effect on any of them." Gelbman and Epstein [12] in reporting their experiences felt that the first trial with alcohol "should be under controlled conditions," either in a physician's office or in a hospital, where medical aid and oxygen are immediately available.

The patient in this report had complete clinical and laboratory studies, the results of which, except for mild hypertension, were within normal limits. The dose of tetraethylthiuramdisulfide was that usually recommended. A careful check demonstrated no errors in the administration of the drug. The test dose of alcohol was small and well within the amounts recommended in the literature. During the test the patient had constant medical and nursing care, with all emergency procedures available. In addition, he had a private nurse at his bedside after he had apparently recovered from the initial reaction and had fallen asleep. Death came suddenly four and one-half hours after the ingestion of 1 oz. of whiskey. The exact immediate cause of death was not determined, and none of the pathological findings could be related to the tetraethylthiuramdisulfide-alcohol reaction. One might conjecture that the marked and prolonged drop in blood pressure in a hypertensive patient caused coronary insufficiency that resulted in a sudden cardiac failure. It is possible that the reaction initiated an abnormal cardiac rhythm that caused the death. We have noted during tetraethylthiuramdisulfide-alcohol reaction various tachycardias and T-wave inversions throughout the precordial leads. Auricular flutter has been reported.[9]

Macklin and his co-workers [13] recently reported cases in which two patients had cardiac arrythmia, two electrocardiographic evidence of myocardial ischemia, and one a myocardial infarction. These findings indicate that the drug when combined with alcohol is cardiotoxic. Perhaps this patient, who was under constant strain, as indicated by the hypertension, arteriolosclerosis, and hyperplastic adrenal glands, was unable to cope with the added stress of the "acetaldehyde syndrome" and adrenal exhaustion developed. This is all speculation, and we cannot state definitely that the combination of alcohol and tetraethylthiuramdisulfide was the direct cause of death in this person; yet it would be difficult to think that death was purely a coincidental occurrence in such a chain of appalling physiological reactions. It is interesting to note how similar were the modes of death in this case and that reported by Jones. Both patients seemed to have weathered a stormy reaction that lasted about two hours. Both fell asleep apparently well, and death came suddenly and unexpectedly in their sleep.

Therapeutic Results.—It is of interest to review some of the reported clinical results with tetraethylthiuramdisulfide in order to evaluate this drug. Gelbman and Epstein [12] state that the early results in a series of 55 alcoholic patients reveal that 45 had not returned to their old drinking habits. These authors do not mention how long the patients were followed. Glud,[3] in drawing conclusions from investigations on about 10,000 persons, gives no short-term or long-term statistics but only generalizations as to the drug's value. He emphasizes the need for psychotherapy in the form of group therapy somewhat similar to Alcoholics Anonymous and "close liaison between physician, relatives, friends, and social agencies." He felt that tetraethylthiuramdisulfide is at most an adjunct to the therapy of the alcoholic patient. Jacobsen and Martensen-Larsen,[5b] in a study of 100 persons with alcoholism treated and observed for six or more months, felt that 52 could be considered as socially recovered and 19 as much better. They state that "the medication must be combined with intensive psychotherapy in order to obtain permanent results." Thimann [8] in a recent article gives a statistical impression on a series of 35 patients: 9 (25.8%) were abstinent for a two to twelve month period; 6 (17.1%) were abstinent for a two to nine month period with one relapse; 1 had two relapses in a 5 month period; 10 (28.5%) were outright failures; and 9 (25.8%) could not be observed. Brown and Knoblock,[6] in a preliminary report on 51 Army patients followed for 6 months or more, noted 40% to be "bone dry" and socially recovered and about 25% to be much improved and "mostly dry." It was their impression that tetraethylthiuramdisulfide provided a partial solution to the problems of alcoholism peculiar to the Army. It is important to note that in none of the clinical reports mentioned are the previous drinking habits of the patients described. Were they sporadic drinkers? Were they continuous drinkers? Had they ever had episodes of abstinence before? If so, how long did these episodes last? These questions must be answered and taken into consideration in any critical evaluation of the treatment.

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[9] Linden, L.: Complication with Antabuse, Svenska Läkartidn **45**: 2469, 1948.

[10] Jones, R. O.: Death Following Ingestion of Alcohol in Antabuse Treated Patient, Canad. M. A. J. **60**: 609, 1949.

[11] Jacobsen, Raby, and Lauritzen, quoted by Glud.[3]

[12] Gelbman, F., and Epstein, N. B.: Initial Clinical Experience with Antabuse, Canad. M. A. J. **60**: 549, 1949.

[13] Macklin, E. A.; Sokolow, M.; Simon, A., and Schottstaedt, W.: Cardiovascular Complications of Tetraethylthiuramdisulfide (Antabuse) Treatment of Alcoholism, J. A. M. A. **146**: 1377 (Aug. 11) 1951.

In view of the necessity of obtaining a strong test reaction in order to teach the alcoholic patient aversion and in view, also, of the unpredictability of the reaction in a given patient, it seems much easier to advise care in the administration of the drug than to carry out this advice. The margin of safety is a question that must be answered in future investigations. In view of some of the alarming, near-fatal and fatal reactions that do occur and in view of the lack of a direct antagonist to the excess of acetaldehyde, it appears wise not to be too enthusiastic. The profession should not minimize the effects of the drug and should consider it relatively dangerous and potentially fatal. We must await further controlled studies in which long-term results are reported. It is only then that the physician will be able to weigh the calculated risk against the chance of success. By making this drug available to all physicians prematurely, we might do more harm than good, possibly place a promising drug in disrepute, and subject ourselves to much unfavorable publicity and attack. It is certain that this treatment is not a panacea for all alcoholic ills. This is not a drug to be used in general practice and dispensed in maintenance doses like digitalis. At most it may be another tool, still unproved, for the psychiatrist or those willing to devote time to the care of the patient with chronic alcoholism.

SUMMARY

Death following a "test drink" of 1 oz. of whiskey (15 cc. of alcohol) in a 49-year-old man receiving tetraethylthiuramdisulfide (antabuse®) for chronic alcoholism is reported.

299 Clinton Ave. (Dr. Becker).

OCCURRENCE OF LOW SALT SYNDROME DURING TREATMENT WITH CHLORAMPHENICOL

Frank J. Catanzaro, M.D.
Adrian M. Ostfeld, M.D.
and
Grace E. Bergner, M.D., St. Louis

Chloramphenicol has been observed to cause diarrhea.[1] We believe this to be the first reported case of salt depletion resulting from diarrhea produced by the drug.

REPORT OF A CASE

Mrs. A. K., an 81-year-old housewife, entered the St. Louis City Hospital on Feb. 4, 1951, with the complaint of shortness of breath and cough for three days. In March, 1947, the patient had the first of a series of episodes of acute heart failure with severe dyspnea, orthopnea, and cough. Three similar episodes occurred during the next three years; the last, September, 1950, was so severe as to necessitate hospitalization. For the first time, she was given digitalis, which seemed to prevent a recurrence of acute symptoms until Feb. 1, 1951, when dyspnea and cough again developed and were accompanied now, for the first time, by noticeable swelling of both ankles.

Past history revealed that the patient had taken a laxative every night for more than 50 years in order to produce a daily bowel movement. Her father died at 81 of "asthma and dropsy," and her only sister died of "heart trouble" at 76.

Physical examination revealed a thin, pale, old woman, who was sweating profusely and breathing laboriously. The temperature was 98.6 F, pulse rate 92 per minute, respirations 28 per minute, and blood pressure 190/60. Her lips and nail beds were cyanotic. The veins of her neck and upper part of the thorax were engorged. Fine crackling rales were present at both lung bases, and the right base was dull to percussion. The heart was greatly enlarged to the left. Numerous extrasystoles, but no murmurs, were heard. There was slight pitting edema to the knees.

Blood studies revealed a hemoglobin of 6.5 gm., 3,040,000 red blood cells, and 9,100 white blood cells. Results of urinalysis were normal. The blood urea nitrogen was 9 mg. per 100 cc. The stools were positive for occult blood. She was given daily the following medications until her death: digitalis, 0.1 gm.; ferrous sulfate, 60 mg., three times daily; nicotinic acid, 50 mg.; thiamine hydrochloride 50 mg.; and ascorbic acid, 100 mg. Administration of potassium iodide, 0.5 gm. twice daily, was begun February 9, and an aminophylline suppository, 0.5 gm., was inserted nightly beginning February 11. A diet containing 1.5 gm. of sodium chloride was ordered.

Her course was stormy for the first eight days, three episodes of pulmonary edema occurring in that time. A single injection of mercaptomerin (thiomerin®) sodium, 1 cc., given on February 13, failed to produce diuresis. Her initial stool on February 5 was loose and small in amount, but an enema on February 8 and magnesia magma (milk of magnesia) on February 11 were required to prevent obstipation.

From the Department of Internal Medicine, Washington University School of Medicine, and Unit I (Washington University), Medical Service, St. Louis City Hospital.

[1] Smadel, J. E.: Chloramphenicol (Chloromycetin) in the Treatment of Infectious Diseases, Am. J. Med. 7: 671 (Nov.) 1949. Harris, H. J.: Aureomycin and Chloramphenicol in Brucellosis, with Special Reference to Side Effects, J. A. M. A. 142: 161 (Jan. 21) 1950.

On February 13, she had a temperature of 100.4 F, after an episode of acute pulmonary edema. The white blood cell count was 12,000, with a slight left shift. Examination of the chest revealed no definite signs of pneumonia. Treatment with chloramphenicol, 0.5 gm. every six hours, was begun that day. Her constant morning request for laxatives abruptly ceased on the 15th; on the 16th she was found on morning rounds to be lying in a puddle of dark liquid stool. By the 17th she was having four to five voluminous watery stools per day. On the 16th blood chemical studies were made because of the severe diarrhea.

The carbon dioxide-combining power and serum chloride were, respectively, 24.8 and 77 mEq. per liter; the blood urea nitrogen was 20 mg. per 100 cc. (see accompanying table). Blood analyses repeated on February 18 gave the following results (expressed in mEq. per liter): sodium 115, potassium 5, chloride 75, and carbon dioxide 25.2

On February 18 the patient was noted to be weak, drowsy and disoriented. That night, 300 cc. of 5% sodium chloride was given cautiously by vein and 24-hour urine collections were begun. Urinary chloride was so low as to preclude adrenal insufficiency; an eosinophil count on the 19th was 100 per cubic millimeter.

Observations in the Reported Case

Date	No. of Stools	Chloramphenicol, Gm.	Milliequivalents per Liter				Blood Urea Nitrogen Mg./100 Cc.	Urinary Chloride mEq./24 Hr.	5% NaCl I.V., Cc.
			Sodium	Potassium	Chloride	CO_2			
2/ 4	0	..	...	...	..	....	..	...	...
2/ 6	1	..	...	...	..	....	9	...	...
2/ 8	Enema	..	...	...	..	....	..	...	...
2/ 9	0	..	...	...	96	....	..	...	...
2/11	Lax.	..	...	...	..	....	..	...	...
2/12	1	..	...	...	..	....	..	...	...
2/13	0	1	...	...	..	....	..	...	...
2/14	0	2	...	...	..	....	..	...	...
2/15	2	2	...	...	..	....	..	...	...
2/16	4	2	...	...	77	24.8	20	...	...
2/17	4-6	2	...	...	..	....	..	...	...
2/18	4-6	2	115	5.0	75	25.2	..	...	300
2/19	4-6	2	...	...	..	....	..	...	...
2/20	4-6	2	128	4.2	93	19.4	41	21.0	...
2/21	4-6	2	...	...	..	....	..	2.0	100
2/22	4-6	2	126	3.8	91	19.4	42	...	...
2/23	4-6	2	...	...	..	....	..	...	...
2/24	4-6	..	...	...	..	....	..	...	...
2/25	3	..	123	3.8	95	18.9	..	8.5	100
2/26	1	..	...	...	..	....	41	3.5	...
2/27	1	..	...	...	..	....	..	3.26	100
2/28	1	..	122	...	94	....	38	17.0	100
3/ 2	1	..	138	...	96	....	..	...	...
3/ 6	..	..	133	5.2	..	....	32	...	75
3/ 7	..	..	140	...	102	....	40	...	...

For the next two weeks, 5% sodium chloride solution was given according to the following formula:

ml. of 5% NaCl to be given intravenously = mEq. deficiency in Na or Cl × body weight in kg. × 0.234 ml.

This formula is based on extracellular fluid volume and is acknowledged to correct deficits only partially, a procedure deemed desirable in the presence of heart failure.

With 5% sodium chloride administration, the serum sodium and chloride rose to nearly normal levels. The diarrhea continued. On February 25, chloramphenicol therapy was discontinued because the temperature had been normal for 48 hours. The diarrhea was subsiding on February 27 and had stopped by February 29. Daily therapy was continued, and on March 6, the serum sodium was 133 mEq. per liter and the blood urea nitrogen 32 mg. per 100 cc. Seventy-five cubic centimeters of 5% sodium chloride solution restored sodium and chloride to normal, and the patient seemed to be doing much better. However, late in the evening of March 9 auricular fibrillation, with a rate of 62, developed. On March 12, she suddenly sat up in bed, called to the nurse, and fell back dead. At no time during her hospitalization was she well enough to tolerate roentgenologic studies of the gastrointestinal tract or proctoscopy.

At autopsy, anatomical findings were deemed insufficient to explain the cause of death. There was a small, recent abscess occupying about one-fourth of the left adrenal gland. The remaining adrenal tissue was entirely normal, grossly and microscopically. The heart weighed 320 gm. and showed no evidence of old or recent infarcts. The coronary vessels were in surprisingly good condition. The lungs showed only slight congestion. The kidneys weighed 120 gm. each, and there was evidence of only slight arteriolar nephrosclerosis. With the exception of the coronary arteries there was moderate, generalized arteriosclerosis. The whole gastrointestinal tract was carefully checked and was found to be normal. The central nervous system was not examined.

COMMENT

The sequence leading to development of a low salt syndome in this patient is not difficult to trace. On admission to the hospital she was placed on a low salt diet (1.5 gm.), of which she ate about a third. With chloramphenicol administration and the resultant diarrheal loss of sodium chloride, a precipitious drop occurred in the serum electrolytes, with the development of the clinical manifestations of the low salt syndrome.

Hypertonic saline administration intravenously as recommended by Schroeder[2] tended to correct the blood electrolytes. However, repeated administration was required as long as diarrhea persisted. With the discontinuance of chloramphenicol therapy and the cessation of diarrhea, the electrolytes were more stable and more easily maintained.

In general, chloramphenicol is described as being of low toxicity, though certain complications have been described, notably occasional nausea, vomiting, mild diarrhea, stomatitis, and vaginitis.[1] The diarrhea is not always as mild as has been reported in the literature. In the patient capable of eating and drinking, this severe diarrhea may not seriously upset the electrolyte balance of the body. However, the debilitated patient with anorexia may rapidly become depleted of salt and water, particularly if the previous diet has been low in salt. Since observing the patient reported here, we have seen three other elderly women in whom diarrhea and the low salt syndrome developed while they were receiving chloramphenicol.

CONCLUSION

The low salt syndrome may result from diarrhea caused by the ingestion of chloramphenicol.

114 N. Taylor Ave. (8) (Dr. Bergner).

2. Schroeder, H. A.: Renal Failure Associated with Low Extracellular Sodium Chloride; the Low Salt Syndrome, J. A. M. A. **141:** 117 (Sept. 10) 1949.

Errors in Prothrombin Time Determinations.—Alkyl sulphate detergents, though not interfering seriously with most chemical routine tests in the clinical laboratory, interfere with prothrombin-time estimation because of their tendency to form insoluable calcium precipitates. Non-ionic detergents do not interfere with the prothrombin-time estimation. If non-soapy detergents cannot be avoided in cleaning glassware wanted for prothrombin-time measurement, a non-ionic detergent should be chosen, or all glassware washed with alkyl sulphates should afterwards be rinsed with dilute acid followed by tap water and distilled water. The use of the acid is recommended, not because it dissolves alkyl sulphates more easily than water but because it is washed out efficiently more easily, since remaining traces can be detected with indicators or by their taste. On the whole, it might be advisable, before accepting a non-soapy detergent, to test it in all laboratory procedures in which it might be used.—H. Lehmann, M.D., Non-Soapy Detergents and Prothrombin-Time Estimation, *Lancet*, Dec. 8, 1951.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

REPORT OF THE COUNCIL

The Council on Physical Medicine and Rehabilitation has authorized publication of the following report.

The Council wishes to express its appreciation for the valuable cooperation and expert services of the Advisory Committee on Ophthalmic Devices. The Committee members are Drs. David G. Cogan, William F. Hughes Jr., William C. Owens, Richard G. Scobee, and Kenneth C. Swan.

Ralph E. De Forest, M.D., *Secretary.*

MINIMAL REQUIREMENTS FOR ACCEPTABLE BETA RADIATION OPHTHALMIC APPLICATORS

Applicators for beta radiation in ophthalmology are used for their superficial caustic effect. The source of beta radiation is usually either radium D (lead 210 with its decay products) or strontium 90. Applicators for this purpose, to be considered for acceptance by the Council on Physical Medicine and Rehabilitation, must fulfill at least the following requirements:

A. The description of the applicator and its output must include:

1. A statement of the identity of the radioactive components, with their half-lives.
2. A statement of the quality of the emitted radiation with:
   (*a*) The ratio of beta to gamma radiation.
   (*b*) The energy of beta particles (maximum mev and average mev).
3. Certification of the quantitative output of each applicator by the National Bureau of Standards or an equally qualified laboratory, other than that of the manufacturing company.

B. Evidence of adequate experimental and clinical trials must be furnished to establish:

1. The accuracy of the claims for output.
2. The clinical advantages and disadvantages, including ease of application, therapeutic effects to be expected, and undesired side-effects to be watched for.

C. The promotional and instructional literature should contain:

1. Information listed under A and B above.
2. Statements indicating that discrimination and caution are necessary in the application of beta radiation to the eye.

APPARATUS ACCEPTED

The following additional product has been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

Ralph E. De Forest, M.D., *Secretary.*

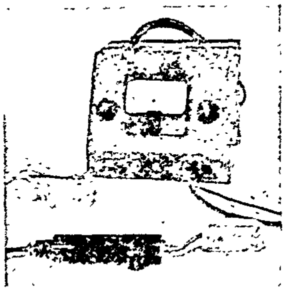
ULTRAFARADIC M-4 IMPULSE GENERATOR

Manufacturer: The Ultrafaradic Corporation, 212 Cortland Ave., Winter Park, Fla.

The Ultrafaradic M-4 Impulse Generator is an electrical device designed to elicit muscular contractions by controlled shocks. It is housed in a metal case with a carrying handle, and has a sloping face panel. Unpacked, its over-all dimensions are 20 (height) by 25 by 20 cm. (8 by 10 by 8 in.) and its weight is 4.8 kg. (14 lb.). Packed for shipment it measures 41 by 30 by 25 cm. (16 by 12 by 10 in.) and weighs 6.3 kg. (17 lb.). This shipping weight includes one active electrode with handle, two cellulose sponges, one multiple-conductor cord, one metal plate 25 cm. (10 in.) square, and one metal leg strap. The device requires a source of 60-cycle alternating current at 110 to 120 volts, and it draws 25 watts.

The apparatus generates impulses consisting of condenser discharges. The number of impulses per second and the voltage can be controlled by the operator. At the rate of six impulses per second the shocks elicit a corresponding succession of distinct twitches; the rate can be increased to elicit smoothly sustained tetanic contractions.

Electrophysiologic tests in an acceptable laboratory showed that this apparatus was a convenient and reliable means of eliciting contractions in normally innervated muscle, and that the contractions so obtained resembled those obtained by using the "faradic" current from an induction coil. The Council on Physical Medicine and Rehabilitation voted to include the Ultrafaradic M-4 Impulse Generator in its list of accepted devices as a device for stimulating muscles with a normal nerve supply.



Ultrafaradic M-4 Impulse Generator

COUNCIL ON FOODS AND NUTRITION

ACCEPTED FOODS

The following products have been accepted as conforming to the rules of the Council.

James R. Wilson, M.D., *Secretary.*

Clapp's Baby Food Division, American Home Foods, Inc., Rochester, New York.

Clapp's Strained Pears and Pineapple. Ingredients: pears pureed, crushed pineapple, sugar, and water sufficient for preparation.

Analysis (submitted by manufacturer).—Total solids 18.54%, moisture 81.46%, ash 0.31%, fat 0.43%, protein (N × 6.25) 0.35%, crude fiber 0.92%, carbohydrate (by difference) 16.53%.

Vitamins and Minerals	Mg. Per 100 Gm.
Carotene	0.06
Thiamine	0.039
Riboflavin	0.037
Ascorbic acid	0.76
Nicotinic acid	0.146
Calcium	11.52
Phosphorus	12.36
Iron	0.58
Copper	0.19

Calories.—0.71 per gram; 20.2 per ounce.

Use.—For use in the feeding of infants, convalescents, and others requiring a soft diet.

Clapp's Junior Pears and Pineapple. Ingredients: pears pureed, crushed pineapple, sugar, and water sufficient for preparation.

Analysis (submitted by manufacturer).—Total solids 18.39%, moisture 81.61%, ash 0.34%, fat 0.31%, protein (N × 6.25) 0.35%, crude fiber 0.97%, carbohydrate (by difference) 16.42%.

Vitamins and Minerals	Mg. Per 100 Gm.
Carotene	0.06
Thiamine	0.034
Riboflavin	0.032
Ascorbic acid	0.75
Nicotinic acid	0.184
Calcium	14.60
Phosphorus	12.55
Iron	0.51
Copper	0.24

Calories.—0.69 per gram; 19.8 per ounce.

Use.—For use in the feeding of infants, convalescents, and others requiring a soft diet.

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THE SIDE DOOR TO SOCIALISM

The medical profession and other groups interested in preserving what they call "the American way of life" have had to participate in head-on battles in recent years when enslaving health legislative proposals have been proposed. The health professions and their allies have been roundly criticized, often with accompanying malicious charges, by those whose attempts to socialize have been defeated. To say the least, the proposed legislation and the excitement that its announcement has raised, in each instance, have been widely discussed. Sometimes, however, when the excitement has died away after each successful defense of freedom and sound health procedures, some members of the population, including many in the health professions, have concluded that the battle is over and all that is necessary when health legislation looms on the horizon is for some few alert persons to occasionally sound a warning; they believe each proposed piece of legislation will be so obvious to all interested parties that there is nothing to do except wait for the warnings.

Unfortunately, the battle between the would-be socializers and those determined to prevent compulsory health measures dominated by a federal government does not permit such idle waiting. If there is room for improvement in the care of the sick the medical profession must be ever alert to the problem and must be constantly seeking ways to effect improvement, thus removing the source of argument by the socializers. Of equal importance, however, is the need for being constantly watchful for legislation that appears beneficial at first glance but that on careful reading is seen to contain proposals that offer an oblique approach to the control desired by the proponents of compulsory health insurance. Apparently the latter believe that if it is impossible to storm into a house through the front door, where visitors are usually expected, it may be easy to sneak in through a side door. Such an attempt was made recently when H. R. 7800 was presented to the House of Representatives.

This bill was introduced on May 12, 1952, and was referred to the House Committee on Ways and Means. Printed copies of the bill were not available until May 14. The committee considered the bill immediately and reported it favorably on May 16 without public hearings and with the request that the bill be acted on on Monday, May 19, under a suspension of the rules. Such a procedure would deny free debate and prevent the introduction of amendments.

H. R. 7800 is an omnibus measure that would provide a variety of amendments to title 2 of the Social Security Act, as amended, which deals with Old Age and Survivors' Insurance benefits. The chief provisions of the bill would (1) increase benefits to Old Age and Survivors' Insurance beneficiaries $5 or 12½%, whichever is the larger; (2) would allow credit of $160 per month for service in the armed forces; (3) permit workers past retirement age to earn up to $70 per month without loss of insurance benefits; and (4) freeze benefit rights for periods during which persons are permanently and totally disabled. The American Medical Association did not consider all of the liberalizing provisions of the bill but directed its attention to section 3 of the measure.

This section deals with persons covered by the provisions of the Old Age and Survivors Insurance title of the Social Security Act who become permanently and totally disabled. It provides that any period during which a person becomes permanently and totally disabled shall be excluded from consideration in computing such person's OASI benefits.

If, for example, at the present time a person is covered for 30 years by the OASI provisions of the Social Security Act and earns a total of $72,000, his average monthly "wage" would be $\frac{\$72{,}000}{30 \times 12}$, or $200. This formula would be applicable even though for 10 of those 30 years the wage earner was permanently and totally disabled and did not earn any wages. The present bill would exclude from the elapsed years the 10 years of permanent and total disability, with the following result: $\frac{\$72{,}000}{20 \times 12}$, or $300. Inasmuch as the average monthly wage is the prime factor in computing OASI benefits, it is apparent that a considerable increase in benefits would result in these cases.

The bill further provides that the Federal Security Administrator shall (*a*) determine what constitutes permanent and total disability; (*b*) establish the types of proof necessary to establish permanent and total disability; (*c*) provide by regulation when and where physical examinations shall be taken; (*d*) be authorized to prescribe the examining physician or agency (including federal installations); (*e*) establish the fees; (*f*) be authorized to pay travel expenses and subsistence incident to the taking of such physical examinations; and (*g*) have power to curtail OASI benefits because of noncompliance with regulations

While this bill does not establish permanent and total disability benefits, it establishes the precedent and the framework for the adoption of such benefits in the future. In view of this dangerous precedent and the immediate control that section 3 of the bill would vest in the Federal Security Administrator over a large segment of the population and the medical profession, the American Medical Association strongly opposed its adoption.

It was decided by the Board of Trustees and the Committee on Legislation that active opposition to this section of the bill should be registered by the American Medical Association and its component local medical societies. Telegrams were, therefore, sent to every member of the House of Representatives, outlining the objections of the Association to section 3 of the bill. In addition, the members of the Committee on Legislation alerted key personnel throughout the country who contacted their individual congressmen and voiced their opposition to the measure.

Soon after the House of Representatives convened on May 19, the measure was brought out and the chairman of the Ways and Means Committee was the first speaker. After a debate of 40 minutes, the question of whether to suspend the rules was presented. A quorum of 290 members responded to the roll call, thus requiring a vote of 194 to suspend the rules. The vote was 150 for the question and 140 opposed. Since those desiring suspension were not two-thirds of the number present and voting, the question was lost.

At this time the bill remains alive and may be disposed of by the committee in one of several ways: (1) by deletion of the objectionable part; (2) by the holding of hearings and by amendments; (3) by being returned to the floor of the House open to amendment, or (4) by no further action being taken.

Immediately after defeat of H. R. 7800, Representative Reed introduced a substitute bill eliminating the controversial medical examination section and increasing permitted monthly income to $100. In reference to the Reed bill, Mr. Kersten declared on the House floor: "If the Fair Dealers prevent this Republican-sponsored bill from coming to the floor, they will be committing a fraud upon the aged and others who need these increases."

It should be made clear that the American Medical Association and the congressmen who opposed the passage of H. R. 7800 under a suspension of the rules are opposed only to one section of the bill and the device adopted by its proponents.The increase of OASI benefits and the other liberalizing features of H. R. 7800 do not ordinarily fall within the province of the American Medical Association; however, the section dealing with permanent and total disability does.

A large number of the congressmen who opposed the passage of H. R. 7800 were as much opposed to the manner in which the measure was presented as they were to the substance of the questionable section. To introduce a bill and "railroad" it through committee without public hearings and then to bring it up on the floor of the House under a suspension of the rules is an undemocratic method of considering legislation. It is certainly unnecessary to resort to a device of this type in connection with the major portions of H. R. 7800. It is necessary, however, if an attempt is being made to "slip through" a proposal that is in public disfavor. Section 3 of the bill falls into this latter category.

Much publicity has been given to the defeat of this bill. Some of the statements have been coldly factual, others filled with more heat than facts. Some critics of the medical profession and of what it stands for have used this as another opportunity to try to smear the American Medical Association and arouse public antagonism; however, they have to resort so freely to innuendoes that their own words cannot give force to their contentions. Their statements cannot offer much help to those who are clamoring for government control of medical care. And yet these same persons and others like them can be expected to persist in their distortions and misrepresentations. They may be licking their wounds at this time, but they will return to try again when an opportunity arises, even if they have to create the opportunity. Thus the medical profession and others with an interest in these problems must be constantly alert to the most devious tactics, one of which is often the most successful in military battles—the flank approach. It has often been said that through piecemeal legislation the same objectives can be obtained as might be sought in a comprehensive bill. The significance of this observation can be seen in section 3 of H. R. 7800.

MATERNAL AND PEDIATRIC CARE OF SERVICEMEN'S DEPENDENTS

The obstetric and pediatric problems of the wives and children of servicemen again have become the subject of discussion by Congress. Hearings have been held by a committee of Congress relative to the need for the creation of a federal program similar to the E. M. I. C. program of World War II. Primarily, the question at issue is, "Do the maternity and subsequent pediatric problems encountered by the wives of servicemen require special federal legislation—legislation national in scope?"

To learn something in regard to these problems the Committee on Maternal and Child Care of the Council on Medical Service has conferred several times with representatives of interested national organizations. Little evidence was uncovered that would indicate the need for federal legislation; however, to obtain further and more specific information, the Council's Committee and the research department of the Welfare Council of Metropolitan Los Angeles jointly sponsored a study in Los Angeles County. A summary of part 1 of the study, and its findings, together with a review of the Committee's activities, appear on page 597 of this issue of THE JOURNAL. Every effort has been made to obtain an objective study. As Dr. Carter, research director, states, "The researchers have enjoyed complete freedom in developing the design for the study, for interview schedule construction, and for analysis of results."

Part 1 of the study provides considerable factual information and will, it is hoped, be useful to medical and social welfare agencies in assisting the wives of servicemen. The study shows that these wives are receiving proper obstetric care and early prenatal care, and most are satisfied with the physician's services and hospital facilities. It is evident from the information reported that a great majority of the servicemen's families are meeting maternity and similar medical problems as do the families of industrial and other workers. They encounter problems, but the majority are managing satisfactorily, paying their own way, even though in some instances it requires careful planning, recourse to savings, and assistance from relatives. Just as with most employed persons outside the service, a few hardships were encountered, but these were usually due to poor planning or none at all, to lack of information as to facilities available, to transpo tation difficulties, and to similar problems that national legislation would not eliminate.

It is equally apparent that medical societies and local health agencies, including those in the "Red Feather" group, can be of much more assistance than they seem to be at present. Few of the wives interviewed were acquainted with local health facilities and services, and they did not know where to obtain such information. Better coordination between health agencies and of health services would have been helpful to many wives. Medical societies should know what health facilities and services are available and should provide the military and other agencies with such information. The military, the Red Cross, and the "Red Feather" agencies should see to it that such information is made available to any serviceman whom it might concern.

The study emphasizes the need for more local effort directed toward the serviceman's family. With this effort properly directed and coordinated, an even greater number of such families can be assured of care without additional tax burdens or federal legislation.

FISH BONES IN THE ESOPHAGUS

It is commonly believed that roentgenologic examination of fish bones lodged in the esophagus is of restricted value, because of the impression that fish bones are usually transparent. A recent study by Goldman [1] strongly suggests that this belief is not justified. Analysis of data provided by 56 hospitalized patients, each of whom was suspected of having a fish bone lodged in the esophagus, revealed that direct roentgen visualization of the fish bone was possible in 30 of 40 patients in whom a foreign body was later found. In 39 of the 40 patients, the fish bone was located above the thoracic inlet, indicating that at this site fish bones should be visible roentgenologically if they are radiopaque; however, even radiopaque fish bones can be obscured by adjacent structures when they are lodged beneath the thoracic inlet of the esophagus.

Bones of 21 varieties of fish indigenous to the northeastern part of the United States were also studied roentgenographically following their immersion in a cervical phantom closely simulating the tissue density of the neck and superior mediastinum. As a result of this investigation, it is pointed out that fish bones whose radiopacity can be expected to be of diagnostic value are bass, codfish, flounder, fluke, gray sole, haddock, halibut, porgie, red snapper, sea bass, smelt, striped bass, and white perch. Fish bones that are less radiopaque include fresh salmon, smoked salmon, and yellow pike, while those either faintly or not at all radiopaque include bluefish, butterfish, mackerel, pompano, and trout.

From the foregoing, it is apparent that the use of improved roentgenologic techniques can be helpful in properly evaluating the clinical status of patients suspected of having fish bones lodged in the esophagus. Since many of these bones are highly radiopaque, greater reliance on roentgenologic diagnosis is warranted in these cases.

PROTECTIVE COLLOIDS AND UROLITHIASIS

When one considers the physicochemical relationships existing in urine, it is surprising that the formation of urinary calculi is not commoner. The solubility of some of the metabolites is relatively low, particularly at the pH that may exist in the urine. Attention has recently been called [1] to the part played by protective colloids in preventing the precipitation of urinary solutes around a nidus, thus initiating calculus formation. It has been shown that in both Negro and white subjects there is an inverse relation between the incidence of urolithiasis and the presence of protective colloidal material. Surface tension measurements provide a good index of the effective action of protective colloids. In preliminary work, hyaluronidase, an enzyme releasing hyaluronic acid from its combination, has been found effective when administered subcutaneously in saline solution in preventing the recurrence of urinary calculi over a period of 11 to 15 months in 18 of 20 patients with a known tendency to rapid stone formation. Hyaluronic acid is a mucopolysaccharide of high molecular weight and acts as a strong dispersing agent and thus as a protective colloid. If the foregoing observations are supported by further studies, the armamentarium of the urologist will be greatly extended.

REGISTRATION UNDER THE HARRISON NARCOTIC ACT

Physicians who are registered under the Harrison Narcotic Act or under the Marihuana Tax Act must effect reregistration on or before July 1 to avoid a penalty. Each year, despite the annual warnings in THE JOURNAL, this requirement is overlooked by some physicians, and unpleasant consequences follow. Failure to register adds a penalty of 25% to the tax payable and, in addition, subjects the physician to the possibility of a fine not exceeding $2,000 or to imprisonment for a maximum of five years, or to both. The commissioner of internal revenue has in past years given some tardy registrants the choice of paying sums by way of compromise, a procedure authorized by law, or accepting criminal prosecution. If this procedure does not produce the required promptness in reregistration, the commissioner will have no choice but to institute criminal prosecution.

STILLBIRTH REGISTRATION IN CONNECTICUT

Connecticut has recently enacted a law requiring stillbirth registration for each "foetus born after a period of gestation of not less than twenty weeks, in which foetus there is no attempt at respiration, no action of heart and no movement of voluntary muscle." Such acts will greatly improve vital records so important in studying fetal mortality problems. Uniformity of definition is essential for good statistical analysis of mortality records for the several states of the United States and the different nations of the world. It is encouraging to see trends toward improved state reporting through legislation of this type. Obstetricians in particular will be interested in the studies that can be made from data collected under the provisions of this law.

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[1] Goldman, J. L.: Fish Bones in the Esophagus, Ann. Otol. Rhin. & Laryng. 6: 957 (Dec.) 1951.

[1] Butt, A. J., and Hauser, E. A.: The Importance of Protective Urinary Colloids in the Prevention and Treatment of Kidney Stones, Science 115: 308 (March 21) 1952.

THE PRESIDENT'S PAGE

A FAREWELL MESSAGE

This is my final message to you as President of the American Medical Association. I am devoting it to a subject of primary importance to the profession, especially in this election year: "The Physician's Role as a Citizen."

Most of us became citizens of the United States long before receiving degrees as doctors of medicine. After we retire from practice we still will be citizens. Our responsibility to our country preceded our professional responsibilities and will continue after they have ended. Medicine is an absorbing career, but this fact must not be allowed to induce any of us to surrender our duties as citizens.

Some physicians play vital roles in government. An English physician, John Locke, wrote the "Two Treatises on Government," which greatly influenced the later democratic thinking of the founders of our republic. Dr. Benjamin Rush of Philadelphia was one of the signers of the Declaration of Independence. A Virginia-born physician, Dr. James McClurg, was a delegate to the Constitutional Convention. At the present time six physicians are serving in the Congress of the United States.

For most of us, however, citizenship begins at home. Our first concern is to see that the community in which we live is a good one. This may mean serving on the city council or the school board. It may mean joining with other physicians to examine school children at the beginning of the fall semester. Perhaps you like young persons and may choose to contribute to your community by becoming a leader in programs designed for the youth. Many physicians are active in service clubs that concentrate on projects for civic betterment. There is hardly an organization today, from the American Legion to the P. T. A., that is not vitally interested in health and medicine. All welcome the advice and cooperation of physicians in their health activities. Paticipation by a physician in community life helps to improve the city in which he lives. It wins friends for the medical profession, because, in a community where the physicians work side by side with other citizens, they are not regarded as a "closed clique," as being "selfish," or feeling that they are "above it all." Furthermore, such participation is a broadening and satisfying experience for the physician.

Unfortunately, there are two factors that tend to keep physicians from taking their proper place as leaders in their communities. The first is the belief that they are "too busy." At the risk of being trite, I repeat that "if you ask the man who is busiest, he will find time to do it." Being "too busy" is party an attitude of mind. It also serves as an excuse to escape from doing something that you do not wish to do. No physician is too busy for one civic project, yet many choose to neglect these community responsibilities, leaving them to other members of the profession who are already burdened with civic duties.

The second factor that causes physicians to hesitate to become leaders in their communities is that they are afraid of criticism by their colleagues. Physicians who are active in local projects meet many persons who, of course, may later become their patients. It is natural for persons to call a physician whom they know when illness strikes. Physicians who are active in community affairs also will receive some publicity from time to time. It will be announced in the local press when a physician is elected president of an organization or is in charge of some community project. This type of publicity is of great benefit to the profession. The doctor who is active in public affairs, however, may find himself accused of "publicity seeking" or unethical activities. There are probably a few members of the profession who could be justly so accused, but they are easily recognized by the insincerity of their efforts and by the eagerness with which they leap into print. To castigate sincere, public-spirited physicians for participating in community activities injures not only these persons but the profession as well. It has been my experience that frequently those who throw stones are the ones who are too lazy or indifferent to accept such assignments. "Professional jealousy" too often is not on a purely professional basis. Physicians must be able to accept the responsibilities of good citizenship in their communities without fear of reprisal by members of their own profession. As physicians we are dedicated to the service of mankind, and we should be able to accept civic as well as medical obligations.

This same philosophy applies to politics. An active, intelligent interest in government is an inherent part of good citizenship. In these days of militant unrest abroad and corruption and socialist scheming at home, it is more than ever imperative that we play our role as citizens with vigor and courage. This crucial election year may well determine the future course of our country. Will it continue on the road toward socialism or can we turn back this trend before individual liberty, individual responsibility, and individual opportunity have been irrevocably lost?

Were it not for the poor showing made by professional men and their families in the presidential election of four years ago, I would hesitate to mention the obvious necessity to register and vote. This is the first political obligation of each one of us. In addition, I believe physicians, as individuals and in informal groups, should play an active role in the functioning of the party of their choice and in political campaigns. As long as our country has a two-party system, the candidates will be chosen and the platforms determined by those who participate actively in political affairs. I hold no brief with those who profess they are "too good" to indulge in politics. The cooks who stir the political pot determine what kind of meal is served, and those who have refused to enter the kitchen have no right to complain when later they are forced to partake of an unpalatable repast.

The year 1952 may well be a significant landmark in American history. I would remind you all in this crucial election year of the words of Edmund Burke: "All that is necessary for evil to triumph in the world is for enough good men to do nothing." Let us not be in default.

I wish to thank you for the opportunity of serving the profession and the public as President of the American Medical Association. In the past two years I have visited 36 states, and, since I was inaugurated as your President last June, I have flown more than 130,000 miles. My experiences have made me prouder than ever of my profession, but at the same time I have become increasingly aware of the enormous obligations that rest on us as citizens as well as physicians.

John W. Cline, M.D.,
San Francisco, Calif.

ORGANIZATION SECTION

A. M. A. STILL OPPOSED TO PAGE COMMITTEE RECOMMENDATIONS

Following is an excerpt from the Secretary's Letter, which is issued at frequent intervals by Secretary George F. Lull, for the officers and delegates of the American Medical Association, the officers of the state medical associations, and the secretaries of the county medical societies:

The National Doctors Committee for Improved Federal Medical Services, Dr. Robert C. Page, chairman, recently has communicated with a number of physicians, recommending the adoption by state medical societies of a resolution which contains a paragraph asking "the American Medical Association to formulate amendments to the bill (S. 1140, 82d Congress) which would meet the Association's objections, or suggest such compromises as will clear the way for the adoption of the admittedly needed reorganization of federal medicine." This latest communication of the National Doctors Committee is another attempt to confuse and divide the profession with respect to legislative recommendations for consolidation of health services.

Whatever policy the House of Delegates of the American Medical Association may adopt in the future with respect to the inclusion of the hospitals of the armed services and the Department of Medicine and Surgery of the Veterans Administration in a federal Department of Health, the position of the American Medical Association today is crystal clear and has been for years. It opposes the transfer of the hospital systems of the armed forces and the Veterans Administration to a federal Department of Health, and it therefore cannot endorse any bill proposing such a consolidation. The transfer of the armed forces hospital system in time of either war or peace could disrupt the medical career system of the armed forces and thereby seriously endanger the security of the nation. In any event, the fighting in Korea and the unsettled conditions in various parts of the world which have occurred since the preparation of the Hoover Commission Report, on which S. 1140 is based, render the report in this respect out of date or at least inapplicable at this time.

Presumably the advocates of S. 1140 are opposed to the rapidly expanding program of medical care for veterans with non-service-connected conditions and the resulting necessity for new hospital construction. The incorporation of such facilities in a new and separate Department of Health would not remedy this situation. In addition, the amalgamation of such a huge hospital program with the United States Public Health Service could quite conceivably result in a relegation of the preventive health aspects of such a department to a secondary role.

It is the belief of the American Medical Association that the best way to institute governmental economy in the use of funds and medical manpower is:

A. To obtain a clear congressional definition of the extent of the government's responsibility for furnishing medical care with particular reference to the treatment of veterans with non-service-connected disabilities and the dependents of service personnel; and

B. To establish a federal board to control the distribution of beds among the several federal hospital services, to insure joint planning in the field of hospital construction and to determine the need and location of proposed new hospitals in the United States.

Since the distribution of this letter, a new bill has been introduced, which, it is reported, substantially adopts the recommendation of the American Medical Association with respect to a federal hospitalization board. The bill will receive the consideration of the A. M. A.'s legislative committee as soon as it is available.

ACTIVITIES OF A. M. A. SPECIAL COMMITTEE ON FEDERAL MEDICAL SERVICES

On April 19, 1952, a memorandum addressed to Dr. George F. Lull by Dr. Frank G. Dickinson entitled "Should the Federal Government Be Insured by a Private Insurer?" was published in THE JOURNAL, page 1426. In its research activities since that time, the Committee on Federal Medical Services of the American Medical Association has reviewed a report prepared in May, 1950, by Mr. Wendell Milliman and entitled "Report on the Practicability of the Proposed Subsidized Insurance Plan for Medical and Hospital Care of Non-Service-Connected Disabilities of Veterans."

Mr. Milliman, who was a consulting actuary at the time he prepared this report and is now Vice President in Charge of Group Insurance of the New York Life Insurance Company, was asked to consider the practicality as an insurance operation of the proposed plan for federally subsidized insurance of medical and hospital care of veterans with non-service-connected disabilities proposed by a resolution presented on Dec. 6, 1949, to the House of Delegates of the American Medical Association.

In his report Mr. Milliman discusses, among other things, certain problems incident to federal subsidization of health insurance plans that were not encompassed in Dr. Dickinson's consideration of the question. The pertinent portions of Mr. Milliman's report in this regard follow.

"Insurance" by a Governmental Agency

The preamble to the resolution refers to the application of the principle of insurance to the financing of the cost of medical care. The implication is that the methods proposed for providing medical and hospital service for non-service-connected disabilities is insurance. Actually, two methods are proposed. First, the amendment to the Veterans' Act proposed by the resolution would direct the Administrator of Veterans' Affairs "to issue to each veteran eligible to receive such benefits a medical and hospital service contract with a benefit provision in an amount sufficient to cover the costs of (1) necessary hospitalization in a civilian hospital. . . ." It is further provided that the Administrator may, if he considers it feasible to do so, purchase "such contract from corporations engaged in the sale and administration of such contracts."

The term "insurance" is frequently used loosely, particularly with reference to proposals for social assistance. Insurance requires a pooling of funds paid by or on behalf of many individuals who are exposed to the same or similar hazards from which funds the losses of those who are struck may be met. The proposal that the Federal Government meet the costs of treatment of the non-service-connected disabilities of veterans in civilian hospitals under a direct contract with each veteran is not insurance. One of the effects of insurance is present, that is, the individual who meets with the misfortune does not have to pay the costs of that misfortune. The essential element of insurance, however, is missing. The funds from which the cost is met do not come from payments made by or on behalf of the veterans eligible for the benefit. These funds come from general tax revenues to which the eligible veterans may or may not have contributed.

This distinction between insurance and governmentally financed benefits is not made for the purpose of quibbling over definitions. It is an important distinction to bear in mind. The soundness of an insurance plan depends upon the adequacy of the premium or contribution required from the insured persons. The soundness "in the sense of ability to pay the promised benefits" of a plan of governmentally financed benefits depends upon the ability of the government to levy and collect sufficient taxes. The answer then to the question as to whether or not it is practicable for the Government to contract with veterans to provide all or a portion of the hospital and medical care for non-service-connected disabilities in civilian hospitals is clear. It is practicable if sufficient tax funds are available.

Care should be taken to avoid calling such a plan insurance and it should be frankly recognized for what it is: a plan whereby the eligible veteran would be entitled to have the Government pay his hospital bill for non-service-connected disabilities in recognition of his military service. The use of the label "insurance" for such a plan would be quite unfortunate. The idea of insurance is readily accepted by the public and the label "insurance" is too frequently used by politicians to sugarcoat plans of governmental assistance. The apparent success of one plan of governmental "insurance" of hospital and medical benefits would doubtless be used as an argument for extension of governmental "insurance" to other classes of the population.

Insurance Through Private Insurance Carriers

The alternative contemplated by the resolution is the purchase of "a contract from corporations engaged in the sale and administration of such contracts. . . ." This alternative would involve bona fide insurance operations. The contracts which would be issued to veterans under this alternative would require the assumption of a risk by the private insurers in return for fixed premiums.

There are many substantial problems which would have to be solved before this alternative could be used. Many of these problems will be discussed subsequently. It is obvious that no one person can say in advance that these problems can be worked out so that a sufficient number of private insurance carriers would be prepared to operate under the provisions of the plan to permit this alternative to become effective. On the other hand, it would take a bold person to say that any one of these problems is insuperable.

Based upon my past experience in somewhat parallel situations I venture the opinion that it would be impossible to obtain a commitment from a substantial bloc of insurers to operate under the plan until the specific details of the plan have been worked out. Since many of the details would necessarily be subject to the discretion of the Administrator of Veterans' Affairs it would be extremely difficult to have any assurance of finality even if specific details for the plan were spelled out at this time. Consequently, I would predict a very cool reception for this proposal on the part of the majority of insurers.

Certain fundamental conditions would have to be satisfied before this alternative providing for purchase of contracts from private insurers could be put into operation. First, the Administrator of Veterans' Affairs would have to be satisfied: (1) That the coverage provided by the private insurers would be adequate to meet the specifications of the law, (2) that the cost of the insurance would be reasonable, and (3) that coverage would be available to all eligible veterans. The insurers, on the other hand, would have to be satisfied: (1) That the benefits to be provided can be defined clearly enough to be incorporated in a contract, and (2) that the premiums which they would receive would be adequate to cover the benefits and expenses.

In addition there are a number of substantial administrative problems which would have to be solved by the Administrator of Veterans' Affairs and the insurers. Among these problems are the following:

1. What types of carriers and what specific carriers would be acceptable?

There are 84 Blue Cross plans operating in the continental United States and there are several hundred "commercial insurance carriers." In general Blue Cross plans and their Blue Shield affiliates confine their operations to individual states or to areas within a state. In some of these areas surgical and medical benefits are available through Blue Cross plans, in others through Blue Shield affiliates, while in some areas no surgical or medical benefits are available through local Blue Cross or Blue Shield organizations. The "commercial" insurance companies operate on an interstate basis and many of them on a national basis. Many of these companies, particularly the larger ones, are mutual companies while others are stock companies.

Most Blue Cross plans provide for the full cost of room and board care for a limited period in specified types of accommodations, with a partial indemnification of the cost of room and board care for continuing periods of hospital confinement. Charges for other hospital services are frequently limited. Blue Shield plans customarily pay for indemnity according to schedule for surgical care (and medical services, if included) without an agreement on the part of the physician to accept such payment as a complete payment for his services. The coverage provided by "commercial" insurance companies is invariably of the indemnity type rather than service. (Since the date of this report some insurance companies have issued group hospital expense insurance contracts which cover the full cost of semi-private hospital care.)

It would be forcefully contended that it is improper to single out either the Blue Cross-Blue Shield plan or the commercial insurance companies as the exclusive media for providing contracts under the proposed plan. On the other hand, the differences in methods of operation between these two types of insurance companies are so great that it would be extremely difficult to encompass both under the same set of rules and regulations.

2. What type of policies would be acceptable?

The answer to the preceding question might narrow the range of this question but would not completely solve it. The policies issued by the various carriers fall into several categories and within each of these categories there is a great variety of policy forms. The broad categories of policies are as follows:

(A) Individual policies sold by commercial companies. These policies are developed for sale by agents to individual policy holders. Because of the manner in which they are sold, the overhead expense is relatively high and the policies must contain restrictive provisions to offset the natural tendency of individuals to select adversely against the insurer. The cost of such policies and the restrictions which they contain would probably make them unacceptable under any plan such as is proposed.

(B) Group policies sold by commercial carriers. These policies are designed to cover a group of individuals bound together by some common interest other than that of obtaining insurance. Usually the policy is issued to an employer to cover his employees or to a union to cover members of the union. Typically, when hospital, surgical and medical benefits are included, the dependents of an employed person can be covered only if the employed person himself is covered. The premium for the insurance is paid by the contracting party, that is, the employer or labor union, but may be offset in whole or in part by contributions towards the premium by the individuals insured. Some of the problems involved in adapting group insurance to this proposal are discussed later.

(C) Individual policies sold by Blue Cross and Blue Shield plans. Most of the coverage now in effect in Blue Cross and Blue Shield plans is provided by policies issued to individuals who have subscribed to the insurance through their places of employment and where the premiums for the insurance are paid by payroll deduction. Many Blue Cross plans permit individuals under certain circumstances to purchase their contracts on a direct basis.

(D) It is conceivable that some form of blanket policy to cover all of the eligible veterans in an area could be worked out area by area with insurers acceptable to the Administrator of Veterans' Affairs.

(E) Conceivably, a combination of coverage under group and/or Blue Cross-Blue Shield plans could be developed with a blanket policy, such as mentioned in the preceding paragraph, to cover those eligible veterans who are not covered under acceptable Blue Cross-Blue Shield or group policies.

3. How would benefits be defined?

It would be necessary to limit the type of hospital accommodations which would be available without charge to the eligible veteran. Some Blue Cross plans provide care in semi-private accommodations. Others limit care to ward accommodations while still others put a dollar limit on the daily charge for room and board accommodations. All group insurance plans written by commercial carriers provide room and board benefits on an indemnity basis.

It would probably be accidental if the surgical schedule provided by a Blue Cross-Blue Shield or commercial insurance carrier were the same as the fee schedule that now applies to veterans with service-connected disabilities treated in civilian hospitals. If benefits are to be provided on a service basis the insurers would undoubtedly require that they have contracts with those who will provide the service, namely, the hospitals and the physicians, to govern the charges to be made by them for specified services. Such a requirement would make it very difficult, if not impossible, for commercial insurance carriers to qualify under the plan.

4. How would existing coverage be integrated with the coverage under this plan?

The larger the group of veterans who would be eligible the more difficult this problem would become. A large proportion of our population is now covered under hospital and surgical contracts issued on a voluntary basis by private carriers. In most cases dependents of an employee can be insured only if the employee is insured. This requirement is a sound one in the normal operation of this business. Continuation of this requirement under the proposed plan would mean that, unless the insurer who would provide coverage for the veteran were the same as the insurer through whom the veteran carries insurance on his dependents, he would either have to carry duplicate coverage on himself or he would have to drop the coverage of his dependents.

If a plan were worked out so that in some or all cases an eligible veteran could continue to carry his insurance with the private insurer with whom he is insured through his employer or labor union, it would, presumably, also be necessary to modify the coverage of these veterans so as to make it broad enough to meet the statutory requirements. This would require providing different coverage for different members of the same group of employees, and different coverage for the breadwinner than for his dependents.

5. How would premiums be determined?

The cost of hospital, medical and surgical benefits varies between different sections of the country, and some Blue Cross plans have found it necessary to recognize variations in hospital costs within local areas. Overhead expense rates also vary from plan to plan. It would appear equitable to recognize at least the variations in such hospital and doctors' charges, as between plans, in determining premiums to be charged to the Veterans' Administration by the plans. A uniform premium rate for all plans would either require some carriers to operate at a loss or would provide for overpayments to other carriers, or both.

If premiums were to vary from area to area, would the method used by the insurer in determining its premium rates for other purposes be acceptable or would a general formula be promulgated by the Administrator which must be followed by all insurers? Would the premiums be subject to periodic redetermination and, if so, would the experience used for this purpose be restricted to veterans covered under the plan or could a broader base be used?

Very substantial difficulties would be encountered in getting general agreement on a basis for determination of premium rates and in my opinion it would be substantially impossible to obtain a basis that would be acceptable to both Blue Cross plans and commercial insurance companies. Some carriers might so fear the possibility of arbitrary action on the part of the Administrator in determining premium rates that they would be unwilling to participate in the plan even if all other aspects of the plan were worked out on an apparently satisfactory basis.

6. What reports, if any, would insurers have to submit to the Administrator on the action on individual claims and what mechanism would be established for adjudication of disputes?

7. How would eligible veterans establish their eligibility and how would the insurers be notified of the fact that they were insuring individuals not previously covered by them or that individuals previously covered by them under some other plan were to be covered under the provisions of this plan? How would transfers of veterans from one area to another or from one employer to another be handled?

Undoubtedly all of the problems outlined above could be solved if a single nation-wide insurer were to provide the coverage. The use of a single private insurance carrier would not appear to serve the objectives which gave rise to the proposal that the Administrator of Veterans' Affairs be authorized to purchase insurance and would seem to accomplish no useful purpose from the standpoint of the Government.

If the number of potential insurance carriers is increased, the difficulty of working out practical solutions to the foregoing problems is substantially increased. Furthermore, if one or more substantial classes of insurance carriers would be ineligible to provide coverage under the plan, particularly when the reason for such ineligibility arises from mechanical problems rather than from questions of real merit, the possibility of getting acceptance of the private insurer aspects of the proposal would be seriously jeopardized.

I have outlined the major administrative problems which I foresee in the establishment of a plan for using private insurance companies to provide the benefits proposed by this resolution. It is my opinion that if a law were passed with the alternative provision permitting purchase of insurance from private insurers the difficulties which the Administrator of Veterans' Affairs would encounter in obtaining an agreement as to (*a*) what private carriers would be acceptable, (*b*) the definition of coverage, (*c*) the level of premium rates, and (*d*) the other problems outlined above, would be so great that he would be practically forced to disregard this authority and provide these benefits by direct contract with the Government.

QUESTION AND ANSWER CONFERENCES IN SCIENTIFIC EXHIBIT

A valuable contribution to graduate medical instruction will be the several question and answer conferences in the Scientific Exhibit at the Chicago Session. These conferences will be informal and intimate and will be held in small rooms holding not more than 200 persons each. Side arms on the chairs will make it easy to take notes. A detailed program has been arranged so that the conferences will cover their respective subjects thoroughly, but ample time has been allowed for free discussion and questions. The conferences will run continuously each day from morning to night, even through the lunch hour.

Cardiovascular Disease

Cardiovascular disease is presented with the cooperation of the American, Illinois, and Chicago Heart Associations by a committee of which Louis N. Katz, M.D., Chicago, is chairman. An outstanding group of cardiologists will discuss some 40 phases of the subject. An exhibit symposium on cardiovascular disease, with 17 exhibits, will supplement the conference. Elaborate preparations have been made for the amplification of heart sounds in various abnormal conditions.

Diabetes

The subject of diabetes is presented with the assistance of the American Diabetes Association and the George F. Baker Clinic, New England Deaconess Hospital, Boston, under the chairmanship of Howard F. Root, M.D., Boston. More than 50 topics are on the program for discussion. On Thursday afternoon a joint session will be held with the Conference on Overweight, Nutrition and Health. An exhibit symposium on diabetes will be shown in an area adjacent to the conference room.

Overweight, Nutrition, and Health

Overweight, nutrition, and health will be presented again this year with the cooperation of the American Dietetic Association, the Metropolitan Life Insurance Company, and the United States Public Health Service. James R. Wilson, M.D., Chicago, is chairman of the committee. Fifty subjects will be discussed during the week, including the joint session with the diabetes group on Thursday. An exhibit symposium on overweight will also supplement the conference.

NEW CHAIRMAN FOR SPECIAL EXHIBIT ON FRACTURES

Owing to the death of Frederick A. Jostes, M.D., St. Louis, Gordon M. Morrison, M.D., Boston, will act as chairman of the Special Exhibit Committee on Fractures at the Chicago Session of the American Medical Association. Dr. Jostes had begun work on the program for the coming meeting, but when he became ill, it was necessary for Dr. Morrison to assume the responsibility of completing the arrangements.

MEDICAL NEWS

ALABAMA

Society News.—At a recent meeting of the Alabama Association of Pathologists, Dr. Jasper D. Bush, Gadsden, retiring president, was appointed chairman of the executive committee. Dr. J. S. Peter Beck, Tuscaloosa, was elected president; Dr. Earl B. Wert, Mobile, vice-president; and Dr. Walter F. Scott Jr., Birmingham, secretary.

Narcotic Violation.—Dr. Robert O. Norton, Louisville, was convicted of violation of the federal narcotic law at Montgomery on Feb. 10. He was sentenced to a term of two years but was placed on probation for five years and fined $3,500.

CALIFORNIA

Personals.—Dr. H. James Hara, clinical professor of otolaryngology, College of Medical Evangelists, Los Angeles, left recently for Japan where he was invited to lecture in Tokyo and Osaka. He was accompanied by his wife, Dr. Margaret E. Hara.

University News.—Dr. William G. Donald, director of student health service and Cowell Hospital, University of California Medical School, has been appointed director of the university's new division of occupational health. Mr. Fred R. Ingram, chief engineer and assistant chief, Bureau of Adult Health, has resigned from the state health department to become engineer administrator of this division, with the title of chief industrial health safety engineer. The division will be responsible for the on-the-job health of employees on all University of California campuses.—Wendell M. Stanley, Ph.D., chairman of the biochemistry department, University of California Medical School, Berkeley, gave the Sigma Xi Lecture at Tulane University of Louisiana School of Medicine, New Orleans, May 6.——Drs. Abraham Schwartz and Jay H. McClellan, Los Angeles, have been named joint winners of the $150 Trudeau Award presented by the California Trudeau Society.

Postgraduate Courses.—Stanford University School of Medicine, San Francisco, announces that postgraduate courses for practicing physicians will be given Sept. 15-19 in internal medicine and therapeutics, general surgery and surgical anatomy, cardiology, general medicine, fractures and trauma to soft tissues, obstetrics and gynecology, dermatology, proctology, pediatrics, psychiatry, and arthritis and rheumatic diseases. Each physician may register for one morning and one afternoon course or one all-day course. Fee for the combination of morning and afternoon course or the all-day course is $75 (not covered by veterans' educational benefits). Apply to the Dean, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15.

ILLINOIS

Ophthalmologic Award.—The Chicago Ophthalmological Society announces that papers for the second award of $100 to be given by the Louis Bothman Memorial Fund, Inc., of Phi Delta Epsilon Fraternity, should be submitted to the secretary of the society, Dr. Gail R. Soper, 636 Church St., Evanston, not later than July 1. Those eligible are ophthalmologists who are in resident training at present or who have completed training in the last six years.

Chicago

Gift to Medical School.—A check for $7,500, the proceeds of a recital given by Marion Anderson, was recently presented to the Chicago Medical School by the Faculty Wives' Association, which sponsored the recital. The money is to be used for scholarships and research.

Prize in Industrial Medicine.—The Chicago Society of Industrial Medicine and Surgery offers an annual prize of $150 for a paper presenting original laboratory or clinical ideas or research data pertaining to industrial medical or surgical subjects. Any physician in the Chicago area who has received his medical degree within the last six years is eligible. The paper and award will be presented at the annual meeting of the society. For information write to Dr. Burton C. Kilbourne, Chairman of the Committee on Awards, 180 N. Michigan Ave., Chicago 1.

Society News.—The annual meeting of the Chicago Society of Industrial Medicine and Surgery will be held June 16 at 8 p. m. at the Palmer House, Chicago, under the presidency of Dr. John R. Merriman of Evanston. Dr. Burton C. Kilbourne, associate in the department of surgery, Northwestern University Medical School, will speak on "Primary Closure of Skin Defects: Indications and Technique," and Dr. Emil D. W. Hauser, associate professor of bone and joint surgery, Northwestern University Medical School, on "Disorders of the Foot Following Injury." All persons of allied medical groups are invited.

Alumni Dinner.—On June 11 the Alumni Association of the University of Chicago School of Medicine will sponsor a faculty-students banquet at the Del Prado Hotel, 5307 S. Hyde Park Blvd. Dr. Victor Johnson, director of the Mayo Foundation, Rochester, Minn., will be the principal speaker. The program will include the presentation of gold keys to Anton J. Carlson, Ph.D., and Dr. Franklin C. McLean. Dean Lowell T. Coggeshall will present the Borden Award, and Dr. Walter L. Palmer will speak briefly for the faculty. Friends and alumni of the University of Chicago are welcome to attend. Tickets may be obtained from Dr. George V. LeRoy at Albert Merritt Billings Hospital, 950 E. 59th St., Chicago, 37.

Personals.—Dr. Matthew Taubenhaus was recently selected as a Claude Bernard Visiting Professor at the Institute of Experimental Medicine and Surgery, University of Montreal, in Canada.——Dr. Robert L. Brown, previously on duty in the Army Surgeon General's Office, has joined the medical consultant service of the Armour Laboratories as an assistant medical director.——Dr. Egon W. Fischmann will be honored at a testimonial dinner given by the faculty of the Chicago Medical School at the Sherman Hotel at 6:30 p. m., June 11. After 21 years as professor and chairman of the department of obstetrics and gynecology, Dr. Fischmann is retiring from active teaching and administration of the department.

Koessler Fellowship.—The Jessie Horton Koessler Fellowship of the Institute of Medicine of Chicago will be available Sept. 1. This fellowship, for the aid of research in biochemistry, physiology, bacteriology or pathology, carries a stipend of $500 a year with the possibility of renewal for one or two years. Applications must be approved by the head of the department in the aforementioned fields or by the director of a research institute or laboratory in Chicago, and must stipulate that the recipient of the fellowship will be given adequate facilities for carrying out the proposed research. Applications will be received up to July 1, and should be sent in quadruplicate to Dr. Paul R. Cannon, Chairman of the Committee on the Jessie Horton Koessler Fund, 950 E. 59th St., Chicago 37.

LOUISIANA

France Honors Dr. Cassegrain.—The "Palmes Academiques" medal of recognition was recently presented by M. Lionel Vasse, consul general of France, to Dr. Octave Cassegrain, New Orleans, founder of France-Amerique de la Louisiane. The medal is bestowed in recognition of services leading toward better understanding of French culture in foreign countries.

University News.—Walter S. Wilde, Ph.D., associate professor of Physiology, Tulane University of Louisiana School of Medicine, New Orleans, has been elected president of the university's chapter of Sigma Xi.——Ernest C. Faust, Ph.D., William Vin-

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Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

cent professor of tropical diseases and hygiene in Tulane's medical school, recently spoke on schistosomiasis before the Portuguese National Congress on Tropical Medicine in Lisbon.——Dr. George E. Burch, head of the Tulane department of medicine, has been awarded a Guggenheim Memorial Foundation Fellowship for study of sickle cell anemia.——Dr. Mary Elizabeth Bass, emeritus professor of medicine at Tulane, will receive the Alumnae Achievement Award from the Women's Medical College of Pennsylvania June 9 in Philadelphia. Dr. Bass retired from the Tulane medical faculty in 1941 after service extending from 1911.——Dr. Edward T. Krementz of the Tulane medical faculty has been given an American Cancer Society award for the study of cancer detection methods.

MICHIGAN

Personal.—Henry F. Vaughan, Dr. P.H., dean, School of Public Health, University of Michigan, has been appointed consultant in public health and sanitary engineering to the Air Surgeon, Air Material Command. Dr. Vaughan was a sanitary engineer officer in the U. S. Army during World War I.

Award for Tuberculosis Work.—The annual Bruce H. Douglas Award has been established by the Michigan Trudeau Society in honor of the late Dr. Bruce H. Douglas, commissioner of health for Detroit, who died in August, 1949. Dr. Douglas was a past president of the National Tuberculosis Association. The award, a bronze plaque, will be presented to an individual who has made an outstanding contribution in the field of tuberculosis treatment or control. In alternate years the recipient must have made at least a portion of his contribution in Michigan.

Industrial Health Award.—Dr. Max R. Burnell, Flint, is winner of the annual William S. Knudsen Award for the outstanding contribution to industrial medicine. The honor is in recognition of his part in General Motors' contribution of more than $1,500,000 to the University of Michigan to establish the Institute of Industrial Health. The recently activated institute is designed to promote research, education, and service in industrial medicine, health, and safety. Dr. Burnell, who has practiced in Flint since 1921, has been medical director of General Motors since 1949.

NEW YORK

Personal.—Dr. S. Beckett Lang, assistant commissioner of mental hygiene since 1941, retired to private practice June 1 after 28 years in state service. He will continue his teaching affiliation at Albany Medical College, where he is associate professor of psychiatry.

Organize Citizens Health Council.—First steps in the organization of a New York State Citizens Health Council were taken at a meeting recently in Albany. Representatives of more than 70 organizations interested in bettering the health of local communities through citizen participation were invited. M. P. Catherwood, dean, New York State School of Industrial and Labor Relations, Ithaca, presided. The outlook for improvement of community health was discussed by Dr. J. Stanley Kenney, New York, former president, Medical Society of the State of New York, from the viewpoint of the private medical practitioner and by Dr. William A. Brumfield Jr., Albany, from that of the professional public health personnel.

Public Aid Program.—A plan has been announced by Raymond W. Houston, acting state commissioner of social welfare, to coordinate the facilities of the State Department of Social Welfare and the State Department of Health in supervising and inspecting preventive and corrective health and medical services. Such services are provided for about 3,000,000 men, women, and children annually in New York State through the more than 1,500 voluntary and public agencies and institutions in the state supervised by the State Department of Social Welfare. Of these 3,000,000 medical, hospital, and dispensary patients, about 1,100,000 are public charges, constituting the largest group of publicly aided persons in the state. Dr. I. Jay Brightman, assistant commissioner for medical services (welfare), is director of the new plan.

Society News.—The Medical Society of the State of New York announces that Dr. Earl D. Osborne, professor of dermatology and syphilology, University of Buffalo School of Medicine, will address the Ontario County Medical Society on "Diagnosis and Treatment of Superficial Skin Cancer" at the Geneva Country Club, Geneva, June 10 at 7 p. m. On June 16 at 8:30 p. m. a symposium on "Low Back Pain" will be given for the Geneva Academy of Medicine at the Belhurst in Geneva. Dr. Thomas I. Hoen, director of the department of neurosurgery, New York University Post-Graduate Medical School, will discuss the neurological aspects, and Dr. Walter Thompson, professor of orthopedic surgery, New York University College of Medicine, will consider the orthopedic aspects. These lectures are arranged by the state medical society in cooperation with the New York State Department of Health.

New York City

Radio Program.—The New York Academy of Medicine announces that Dr. George A. Perera, associate professor of medicine, Columbia University College of Physicians and Surgeons, will be the speaker June 12 at its postgraduate radio program. His topic will be "Endocrine Factors in Hypertension." The program may be heard from 9 to 10 p. m. over station WNYC-FM—93.3 megs.

Personal.—Drs. John F. Erdmann and Nathan B. Van Etten were the recipients of meritorious awards bestowed by the alumni of the New York University College of Medicine at their annual dinner May 20. Dr. Erdmann (class of 1887) has practiced surgery in New York for more than 50 years. Dr. Van Etten (class of 1890), President of the American Medical Association in 1940, was recently honored by the naming of the Nathan B. Van Etten Hospital, a 500 bed tuberculosis hospital now under construction in the Bronx.

Aid for Alcoholics.—According to Mr. Julius Isaacs, former city magistrate and member of the committee on alcoholism of the Welfare and Health Council of New York City, homeless alcoholics in New York "will have their first real chance in 50 years for rehabilitation" under the city's program at Hart Island. The island's facilities can be expanded to handle 2,000 men. An inventory of local resources will be taken by a group headed by Dr. Hubert S. Howe of the Academy of Medicine Health Committee, and Dr. Herbert Pollack of Mount Sinai Hospital will direct consultation with local groups.

NORTH CAROLINA

MacNider Memorial Issue.—The April issue of the *North Carolina Medical Journal* is dedicated to the late Dr. William de Berniere MacNider, who died at Chapel Hill on May 31, 1951. Dr. MacNider was a member of the faculty of the University of North Carolina for many years. The papers in the memorial issue were contributed by nine of his colleagues on the basic science faculty of the medical school.

TEXAS

Nu Sigma Nu Lecture.—Dr. John R. Haserick of the Cleveland Clinic Foundation, Cleveland, recently delivered the Nu Sigma Nu Lecture at the University of Texas Medical Branch, Galveston, on "Lupus Erythematosis."

Gifts to University.—Books and equipment valued at about $5,000 have been donated to the University of Texas Medical Branch, Galveston, from the estate of the late Dr. Malcolm K. McCullough, Dallas ophthalmologist.

Laboratory Building Dedicated.—The Gail Borden Laboratory Building, dedicated at the graduation exercises of the University of Texas Medical Branch, Galveston, June 6, will provide library facilities for 100,000 volumes and laboratory and classroom space for the departments of biochemistry and nutrition, bacteriology and parasitology, physiology, and pharmacology. It is named in honor of Gail Borden (1801-1876), pioneer Galveston nutritionist, publisher of the first newspaper in Texas and collector of customs for the port of Galveston under the Republic of Texas. Wendell H. Griffith, Ph.D., professor of biochemistry and nutrition, University of California at Los Angeles, and Mr. Joe B. Frantz, Borden biographer, spoke at the dedication, and Dr. Isidor S. Ravdin, vice-president in charge of medical affairs at the University of Pennsylvania, spoke at the exercises. Certificates of appreciation were awarded to graduates of the medical branch of more than 50 years of service.

WEST VIRGINIA

Personals.—Dr. Harry J. Manning, formerly of Elkins, has accepted appointment as director of the department of radiology at the Spencer Hospital, Meadville, Pa.——Dr. John S. Pearson, formerly of Huntington, is now serving as assistant medical director for the John Hancock Mutual Life Insurance Company, Boston.

Society News.—At the annual meeting of the West Virginia Public Health Association in Charleston May 8-10 Mr. Donald Lough, Williamson, was elected president; Dr. Henry C. Huntley, Charleston, first vice-president; Miss Rose Minor, Charleston, treasurer; and Miss Annette King, Charleston, executive secretary. At a meeting of the West Virginia Health Officers' Association, held in connection with the conference, Dr. Leon A. Dickerson of Charleston was reelected president.

WISCONSIN

Dr. Rasmussen Joins UCLA Faculty.—Dr. Aaron F. Rasmussen, formerly of the University of Wisconsin Medical School, Madison, has accepted appointment as professor of infectious diseases (virology) at the University of California at Los Angeles School of Medicine. He will serve as chief of the division of virology in the department of infectious diseases.

Personals.—Dr. Francis D. Murphy, director, department of medicine, Marquette University School of Medicine, Milwaukee, received the annual medical alumni award from Marquette University March 29.——Dr. Alexander M. MacKay has resigned as chief of the anesthesia division of the department of surgery, University of Wisconsin Medical School, Madison, and will enter private practice on the West Coast.

GENERAL

Dr. Lull Gives Schwitalla Lecture.—Dr. George F. Lull, Chicago, Secretary and General Manager of the American Medical Association, recently delivered the third Alphonse M. Schwitalla Lecture, sponsored by Alpha Omega Alpha fraternity at St. Louis University. Dr. Lull spoke on "Medical Ethics—The Physicians' Guide."

Proctologists Meet in Chicago.—The International Academy of Proctology invites all members of the American Medical Association to attend its annual meeting at the Edgewater Beach Hotel, Chicago. Scientific sessions are scheduled for 9 a. m. to 5 p. m., June 6 and 7, and motion pictures on surgery of the anus, rectum, and colon will be shown June 8.

Course on Asphyxial Emergencies.—The Society for the Prevention of Asphyxial Death announces a course in laryngoscopy and intubation, of interest to obstetricians, pediatricians, oral surgeons, and others concerned with asphyxial emergencies. Classes will be held June 13-14 (Friday afternoon and Saturday morning) in the department of pathology, Cook County Hospital, Chicago. Instruction includes dog and cadaver practice. Admission will be by application only. For information apply to Secretary, Society for the Prevention of Asphyxial Death, Inc., 2 E. 63 St., New York 21.

Academy to Have New Journal.—At a meeting in Cincinnati April 1 the American Academy of Obstetrics and Gynecology elected Dr. Carl P. Huber, Indianapolis, president; Dr. Robert A. Kimbrough Jr., Philadelphia, president-elect; Dr. Ralph A. Reis, Chicago, secretary; and Dr. Herbert E. Schmitz, Chicago, treasurer. Dr. Reis also was chosen to be editor of the academy's new journal, which will be published monthly starting Jan. 1, 1953. The next annual meeting of the academy will be held in the Palmer House, Chicago, Dec. 15-17. Information can be obtained from Dr. Reis, Secretary, American Academy of Obstetrics and Gynecology, 116 S. Michigan Ave., Chicago 3.

Dangerous Cheese Seized by the Government.—More than 6,000 lb. of processed cheese was seized in Kansas City, Chicago, and San Francisco because the transparent wrappers had been treated with an injurious chemical, the U. S. Food and Drug Administration announced. The chemical, dehydroacetic acid, had been used to prevent growth of mold on the wrapped product. Government chemists reported it had penetrated the cheese. The toxicity of the chemical is said to be similar to that of carbolic acid.

Laennec Society Offers Prize.—The Laennec Society of Philadelphia awards an annual prize of $200 for the best paper submitted in any field related to diseases of the chest. This prize is open to undergraduates, interns, residents, and fellows throughout the United States. The work should be original. The society requests that the prize winning paper be presented at one of its regular scientific meetings. Five copies of the manuscript should be submitted, typed double-spaced and with wide margins, to the secretary of the society, Dr. Charles M. Norris, 3401 N. Broad St., Philadelphia 40, by Oct. 1.

Meeting of Vascular Surgeons.—The Society for Vascular Surgery will hold its annual meeting in the north ballroom of the Conrad Hilton Hotel in Chicago, June 8, under the presidency of Dr. Alfred Blalock of Baltimore. Both sessions of the scientific program (at 9 a. m. and 2 p. m.) are open to the medical profession, but only members of the society may attend the luncheon executive session, which will be held in the north assembly room at 12:30 p. m. The afternoon session will be opened with the presidential address, "The Anatomy of Pulmonary Stenosis and Atresia with Comments on Surgical Therapy," by Dr. Blalock and (by invitation) Drs. Thomas N. P. Johns and G. Rainey Williams of Baltimore. The banquet for members, wives and invited guests, which will be held in the north assembly room at 8 p. m., will be preceded by a cocktail party in private dining room No. 1 at 7 p. m.

Traffic Safety Winners in 1951.—Colorado and Shaker Heights, Ohio, have been named grand award winners in the 1951 National Traffic Safety Contest conducted by the National Safety Council, in which all 48 states and 677 cities participated. There were 146 cities of more than 10,000 population and 601 municipalities with populations between 5,000 and 10,000 without a traffic fatality in 1951. Massachusetts won first place among eastern states; Colorado among western states, in addition to winning the grand award; and Pennsylvania among the eight largest states, which are grouped separately because of their peculiar traffic problem growing out of large population and mileage. Cities which won first place in their various population groups were: Los Angeles; Washington, D. C.; Minneapolis; Seattle; Providence, R. I., and Rochester, N. Y. (tied); South Bend, Ind., and Berkeley, Calif. (tied); Kalamazoo, Mich.; Shaker Heights, Ohio; and Stillwater, Okla.

Blood Irradiation Society Meets.—The American Blood Irradiation Society will meet June 7-8 at the Conrad Hilton Hotel, Chicago, under the presidency of Dr. Robert C. Olney of Lincoln, Neb. The following papers will be presented:

Valentina P. Wasson, George P. Miley, New York, Further Studies with U.B.I. in Rheumatic Fever.
Charles L. von Pohle, Chandler, Ariz., Pneumococcic Meningitis.
William H. Kenner, Chicago, Report on U.B.I.
Emmanuel B. Woolfan, Hollywood, Calif., Infectious Hepatitis.
Edward V. Madey, Chicago, Clinical Evaluation.
Ivan T. Schultz, Humbolt, Iowa, Treatment of Threatened Abortion.
Elmer W. Rebbeck, Pittsburgh, Controlling Systemic Infection Following Tooth Extraction.
Ora L. Huddleston, Santa Monica, Calif., Clinical Observations.
Robert C. Olney, Lincoln, Neb., Preventing Amputation for Diabetic Gangrene.

Typhoid Outbreaks.—Dr. James R. McDowell of the Colorado Department of Public Health has reported three outbreaks of typhoid. The first outbreak consisted of 12 patients who had eaten at a church supper on Jan. 21. The typhoid organism was found in the feces of a 58-year-old woman who assisted in preparing the salad.

The second outbreak (8 cases) occurred simultaneously with the first but was not related to it. Water samples from an open spring on two occasions revealed evidence of fecal contamination. The third outbreak occurred among five familial contacts. On April 7 a diagnosis of typhoid was made in a 19-month-old child, who had recently come to Colorado from Ohio. On April 8 Salmonella typhosa was isolated from two adults and on April 16 from two others.

Dr. Arthur M. Washburn of the Arkansas Board of Health reports that since institution of the typhoid investigation and control program in 1938, 110 chronic typhoid carriers have been registered in the state. During about the same period the number of typhoid cases reported has declined from 645 in 1937 to 82 in 1951.

New Organization of Neurosurgeons.—The Congress of Neurological Surgeons was organized a year ago. Requirements for membership provide only that the applicant shall have (1) either completed the formal training prescribed for entrance to examination by the American Board of Neurosurgery, Inc., or (2) practiced neurosurgery for a sufficient period of time to have gained such professional esteem as to distinguish him as a competent practitioner who consistently does creditable work. The organization is designed to present the postgraduate type of educational program to the membership. Neurosurgeons interested in membership may communicate with Dr. Bland W. Cannon, Secretary, Congress of Neurological Surgeons, 1092 Madison Ave., Memphis. The second annual meeting of the congress will be held at the Palmer House, Chicago, Nov. 6-8. Among the speakers will be Prof. Herbert Olivecrona of Stockholm, Sweden; Dr. Albert Kuntz, professor of anatomy and director of the department of anatomy in the St. Louis University School of Medicine; Dr. Edgar A. Hines, Mayo Clinic, Rochester, Minn.; Dr. Francis L. McNaughton of Montreal, assistant professor of neurology and neurosurgery in the McGill University Faculty of Medicine; and Dr. Harold G. Wolff, professor of medicine (neurology) and associate professor of psychiatry, Cornell University Medical College, New York.

Diabetes Association Meeting.—The American Diabetes Association, meeting at the Drake Hotel in Chicago, June 7-8 under the presidency of Dr. Arthur R. Colwell, Chicago, has scheduled a joint meeting with the Endocrine Society, to be held in the Red Lacquer Room of the Palmer House on Saturday at 2 p. m. The Banting Memorial Lecture on "Insulin" will be delivered by Dr. Charles H. Best, director, Banting and Best department of medical research and the department of physiology, University of Toronto, Canada. On Saturday at 7 p. m. there will be a banquet in the Gold Coast Room of the Drake. On this occasion presentation of the Banting Memorial Medal will be made to Dr. Robert Russell Bensley, professor emeritus of anatomy, University of Chicago School of Medicine, and the award to the Banting Memorial lecturer, Dr. Charles H. Best, will be presented by Dr. Elliott P. Joslin of Boston, honorary president of the association.

The following panel discussions will be held at noon on Sunday at the Drake Hotel:

Factors in the Pathogenesis of Diabetes (Walton Room).
Complications and Sequelae of Diabetes: Relation to Control (Gold Coast Room).
Diabetic Acidosis and Coma: Prevention and Management (French Room).

At the afternoon session in the Grand Ballroom there will be a symposium on "Lipoproteins in Diabetes Millitus."

Society Elections.—At the national meeting of the American Federation for Clinical Research, held in Atlantic City, N. J., May 4, Dr. James V. Warren of Atlanta was elected president; Dr. Stewart Wolf of Oklahoma City, vice-president; and Dr. Lawrence E. Hinkle Jr. of New York, secretary-treasurer.——At the annual meeting of the American College Health Association held in Boston May 1-3, Dr. Max L. Durfee, Oberlin, Ohio, was elected president; Dr. Dana L. Farnsworth, Cambridge, Mass., president-elect; Dr. Leona B. Yeager, Evanston, Ill., vice-president; and Edith M. Lindsay, Ed.D., Berkeley, secretary-treasurer.——At the annual meeting of the American Society for Clinical Investigation in Atlantic City May 5, Dr. Eugene A. Stead Jr. of Durham, N. C., was elected president; Dr. Carl V. Moore, St. Louis, vice-president; and Dr. William M. M. Kirby, Seattle, secretary-treasurer. Dr. Stanley E. Bradley, New York, will be editor of the *Journal of Clinical Investigation* for the next five years.——At the meeting of the American Association of Pathologists and Bacteriologists, held in New York, April 10, Dr. William H. Feldman, D.V.M., Rochester, Minn., was elected president; Dr. James B. McNaught, Denver, vice-president; Dr. Alan R. Moritz, Cleveland, secretary, and Dr. Sidney Farber, Boston, treasurer. The next meeting of the association will be held in St. Louis, April 2-4, 1953. The topic selected for the symposium in 1953 is "The Modification of Structural Changes in Infectious Neoplastic and Other Diseases Following Use of Modern Chemotherapeutic Agents."

Science Writers' Tour of Cancer Laboratories.—The American Cancer Society has given an accounting to the public of the more than $20,000,000 spent during the last six years for cancer research. It did this by sponsoring a two week tour of representative Eastern and Midwestern laboratories by a dozen of the nation's science writers. From Boston to Minneapolis, research directors threw open all doors to the science writers, spoke candidly of their plans and progress and extended a hospitality unprecedented in relations between scientists and science writers. The effort resulted in day-to-day running stories in major newspapers and news magazines throughout the United States. Few science writing ventures ever attained the lineage accorded this story of science's attack against cancer. Coinciding with the start of the Cancer Society's annual April campaign, the accounts had the effect of pointing out what America is getting for its cancer control dollar. Early campaign contributions indicated the nation was satisfied and will invest more money than ever in the fight against cancer. For the institutions visited, the tour was a unique experiment. An enormous variety of projects were unfolded during brief seminars and hurried visits to laboratories. As many as a score of scientists were interviewed during a single day; and their interests ranged from nuclear physics to complex biochemical phenomena. A big question was whether the science writers could absorb this highly concentrated technical information and present accurate and interesting stories about it. Clippings show that they did. Pat McGrady, science editor of the American Cancer Society, who led the group, said that the experiment was new for the science writers, too. For them it was a continuous race—early morning rising in hotel rooms or trains, taxis to institutions, the parade of investigators before them outlining their work, mass conferences over lunch tables, the race to telegraph and telephone facilities to give their stories to morning newspapers, and writing their stories for afternoon newspapers during the train ride to the next point. And, next day (even Sunday) the same routine all over again—with new names, new faces, new surroundings, and new work. Three of the science writers who had been with Admiral Byrd at the South Pole agreed that the "tumor tour" was more arduous than the Antarctic expedition. Cities visited included Boston (Harvard Medical School, Massachusetts General Hospital, Massachusetts Institute of Technology, Polaroid Corporation), New York (Memorial Cancer Center, Sloan-Kettering Institute, Columbia College of Physicians and Surgeons, and Delafield Hospital), Philadelphia (Institute for Cancer Research), Baltimore (Johns Hopkins Hospital), Washington (National Cancer Institute, Chemical Biological Coordination Center, George Washington University, and Georgetown Medical-School), Chicago (University of Chicago and University of Illinois medical schools), Madison (University of Wisconsin Medical School), and Minneapolis (University of Minnesota Medical School). Science writers who made the tour were: Alton Blakeslee, Associated Press; Earl Ubell, *New York Herald-Tribune;* William Manchester, *Baltimore Sun;* Charles Einstein, International News Service; Wadsworth Likely, Science Service; Roy Gibbons, *Chicago Tribune;* Victor Cohn, *Minneapolis Tribune;* Thomas R. Henry, *Washington Star;* Marguerite Clark, *Newsweek;* Jules Billard, *Pathfinder;* William White, *Look;* and Arthur J. Snider, *Chicago Daily News.* Local science writers joined the group in each of the cities visited.

FOREIGN

Prize for Work on X-ray Therapy.—A David Anderson-Berry silvèr-gilt medal, together with a sum of money amounting to about £100 ($281) will be awarded in 1953 by the Royal Society of Edinburgh to the person who, in the opinion of the council, has recently produced the best work on the therapeutic effect of x-rays on human diseases. Applications for the prize may be based on both published and unpublished work and should be accompanied by copies of relevant papers. Materials must be in the hands of the General Secretary, Royal Society of Edinburgh, 22 George St., Edinburgh 2, by March 31, 1953.

Plague Control in Northern India.—An investigation into the carry-over of plague infection from year to year will be undertaken by a special team working in various plague spots of Uttar Pradesh (United Provinces), Northern India, in 1952 and 1953, as the result of an agreement recently signed by the Government of India and the World Health Organization. The project is designed: (1) to detect and delimit the areas where plague is endemic; (2) to study the causes of this edemicity in comparatively isolated areas; (3) to investigate how the infection spreads outward from these endemic areas and to determine the factors favoring the spread of the infection. According to official figures, the toll of plague in Uttar Pradesh has steadily decreased over the last 40 years from 332,000 deaths in 1911 to 81,000 in 1928, 51,000 in 1947, and 10,000 in 1950, but still remains entrenched in a number of centers.

MEETINGS

American Medical Association, Chicago, June 9-13. Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

American Association of Genito-Urinary Surgeons, Seaview Country Club, Absecon, N. J., June 19-21. Dr. Norris J. Heckel, 122 South Michigan Ave., Chicago 3, Secretary.

American Hearing Society, Chicago, June 28. Mrs. Francis E. Lee, 817 14th St. N.W., Washington 5, D. C., Secretary.

American Medical Women's Association, Chicago, June 8. Dr. Lucille Marsh, 1168 Briarcliff Road, N.E., Atlanta, Ga., Corresponding Secretary.

American Orthopedic Association, London, England, June 30-July 4. Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

American Radium Society, Chicago, June 8. Dr. John Wirth, 635 Herkimer St., Pasadena 1, Calif., Secretary.

American Urological Association, Chalfonte-Haddon Hall, Atlantic City, N. J., June 23-26. Dr. Charles H. deT. Shivers, Boardwalk National Arcade Bldg., Atlantic City, N. J., Secretary.

American Veterinary Medical Association, Ambassador Hotel, Atlantic City, N. J., June 23-26. Dr. J. C. Hardenbergh, 600 South Michigan Ave., Chicago 5, Executive Secretary.

Idaho State Medical Association, Sun Valley, June 15-18. Dr. Robert S. McKeon, 305 Sun Bldg., Boise, Secretary.

Maine Medical Association, Samoset Hotel, Rockland, June 22-24. Mr. W. Mayo Payson, 142 High Street, Portland 3, Executive Secretary.

Medical Library Association, Lake Placid Club, Lake Placid, N. Y., June 24-27. Miss Caroline Riechers, 1758 West Harrison St., Chicago 12, Secretary.

Post Graduate Medical Assembly of South Texas, Shamrock Hotel, Houston, July 21-23. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secretary.

Society for Vascular Surgery, Chicago, June 8, Dr. George D. Lilly, 331 Ingraham Bldg., Miami 32, Fla., Secretary.

Upper Peninsula Medical Society, Country Club, Iron Mountain, Mich., June 27-28. Dr. E. Theodore Palm, 412 Superior Ave., Crystal Falls, Mich., Secretary.

West Virginia State Medical Association, The Greenbrier, White Sulphur Springs, July 24-26. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

INTERNATIONAL

Australasian Medical Congress, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, General Secretary.

Commonwealth and Empire Health and Tuberculosis Conference, Central Hall, London, England, July 8-13. Dr. J. H. Harley Williams, Tavistock House North, Tavistock Sq., London, W.C.1, England, Secretary General.

Congress of the International Diabetes Federation, Leyden, Netherlands, July 7-12. Dr. F. Gerritzen, 33, Prinsegracht, The Hague, Netherlands, Secretary.

European Congress of Cardiology. University of London, Bloomsbury, W.C.1, England, Sept. 10-12. Dr. K. Shirley Smith, 35 Wimpole St., London, W.1, England, Secretary.

European Society of Cardiovascular Surgery, Strasbourg, France, Oct. 3-4. Sir James Learmonth, Department of Surgery, University New Buildings, Edinburgh 8, Scotland.

Interamerican Cardiological Congress, Buenos Aires, Argentina, Aug. 31-Sept. 7. Dr. Blas Moia, Larrea 1132, Buenos Aires, Argentina, Secretary-General.

Inter-American Congress of Public Health, Havana, Cuba, Sept. 27-Oct. 1. Pan-American Sanitary Bureau, 2001 Connecticut Ave., Washington, D. C.

Inter-American Congress of Radiology, Mexico City, Mexico, Nov. 2-8. Dr. Guido Torres Martinez, Marsella No. 11, Mexico, D.F., Secretary-General.

International Congress of Biochemistry, Paris, France, July 21-27. Prof. Jean Courtois, 4, Avenue de l'Observatoire, Paris 6^{e}, France, Secretary.

International Congress of Dermatology and Syphilology, London, England, July 21-26. Dr. Gordon B. Mitchell-Heggs, 5, Lisle St., London, W.C.2, England, General Secretary.

International Congress of Dietetics, Royal Tropical Institute, Amsterdam, The Netherlands, July 7-11. Miss Diane J. Ten Haaf, Educational Bureau of the Nutritional Council, 42 Koninginnegracht, The Hague, Netherlands, General Secretary.

International Congress on Diseases of the Chest, Rio de Janeiro, Brazil, Aug. 24-30. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

International Congress of Haematology, Mar del Plata, Argentina, Sept. 21-26. Dr. Carlos Reussi, Anchorena 1710, Buenos Aires, Argentina, Secretary.

International Congress of Health Technicians, Palais de la Mutualite, Paris, France, June 9-14. Secretariat General, 6 Square Desaix, Paris XV^{e}, France.

International Congress of the History of Medicine, Nice-Cannes, France, and Monaco, Sept. 8-18. Dr. F. A. Sondervorst, 124 Avenue des Allies, Louvain, Belgium, Secretary-General.

International Congress on Hydatid Disease, Santiago, Chile, Nov. 21-24. Organizing Committee, P. O. Box 9183, Santiago, Chile.

International Congress of Internal Medicine, Friends House, London, N.W.1, Eng. Sept. 15-18. Sir Harold Boldero, 12 Pall Mall East, London, S.W.1, England, Secretary.

International Congress on Medical Records, London, England, Sept. 7-12. Miss Gwen Perkins, 120 C Street S.E., Washington, D. C., Chairman.

International Congress of Medicine and Sport, Paris, France. May 29-June 1. Prof. Chailley-Bert, 1 rue Lacretelle, Paris 15^{e}, France, Chairman.

International Congress on Neuropathology, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

International Congress of Physical Medicine, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

International Congress of Physiopathology of Animal Reproduction and Artificial Insemination, Copenhagen, Denmark, July 7-10. Prof. Ed. Sorensen, The Royal Veterinary and Agricultural College, Bülowsvej 13, Copenhagen V, Denmark.

International Congress of Urology, The Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 15-18. Dr. John A. Taylor, 2 East 54th St., New York, N. Y., U. S. A., Secretary-General.

International Society of Geographic Pathology, Liège, Belgium, July 15-18. Dr. Fred C. Roulet, Habelstr. 24, Basel, Switzerland, Secretary General.

International Union Against Tuberculosis, Rio de Janeiro, Brazil, Aug. 24-27. Prof. Etienne Bernard, 66 Blvd. St. Michel, Paris 6e, France, Secretary-General.

Neuroradiologic Symposium, Stockholm, Sweden, Sept. 17-20. Docent Ake Lindbom, Symposium Neuroradiologicum, Serafimerlasarettet, Stockholm K., Sweden, Secretary.

World Medical Association, Athens, Greece, Oct. 12-16. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 24-26, 1952. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery 4.

Alaska:* *Examination.* Juneau. On application in other towns where there are board members. *Reciprocity.* On application. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Arizona:* *Examination.* Phoenix, July 15-17. *Reciprocity.* July 19. Sec., Dr. J. H. Patterson, 316 W. McDowell St., Phoenix.

Arkansas:* *Examination. Regular.* Little Rock, June 19-20. Sec., Dr. Joe Verser, Harrisburg. *Homeopathic.* Little Rock, June 10-11. Sec., Dr. Carl S. Bungart, 105 N. 14th St., Fort Smith. *Eclectic.* Little Rock, June 5-6. Sec., Dr. Frank C. Smith, 2301 Broadway, Little Rock.

California: *Written.* San Francisco, June 23-26; Los Angeles, Aug. 18-21; Sacramento, Oct. 20-23. Application must be received at least two weeks prior to date of examination. *Oral for Reciprocity Applicants.* San Francisco, June 21; Los Angeles, Aug. 16; San Francisco, Nov. 8. Applicants are requested not to arrange to come to an oral examination until they receive notice from the Credentials Committee. *Oral and Clinical for Foreign Medical School Graduates.* San Francisco, June 22; Los Angeles, Aug. 17; San Francisco, Nov. 9. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento.

Colorado:* *Examination.* Denver, June 10-12. Final date for filing application was May 12. *Reciprocity.* Denver, July 8. Applications accepted through June 9. Sec., Dr. Samuel H. Brown, 831 Republic Bldg., Denver.

Connecticut:* *Regular. Examination.* Hartford, July 8-9. Sec. to the Board, Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, July 8-9. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: Dover, July 8-10. Sec., Dr. Joseph S. McDaniel, 229 South State St., Dover.

Florida:* *Examination.* Jacksonville, June 29-July 1. Sec., Dr. Homer L. Pearson, 701 Dupont Bldg., Miami.

Georgia: Atlanta, June 10-11. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Guam: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Ex. Sec., Dr. Austin W. Matthis, Agana.

Hawaii: *Examination.* Honolulu, July 14-17. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

Idaho: Boise, July 14-16. Sec., Mr. Armand L. Bird, 305 Sun Bldg., Boise.

Illinois: *Examination.* Chicago, June 24-26 and Oct. 7-9. Supt. of Regis., Mr. Charles F. Kervin, Capitol Bldg., Springfield.

Indiana: Indianapolis, June 1952. Sec., Dr. Paul R. Tindall, 538 K of P Bldg., Indianapolis 4.

Iowa:* *Examination.* Iowa City, June 9-11. Acting Sec., Dr. Walter L. Bierring, 1027 Des Moines St., Des Moines

Maine: Augusta, July 8-9. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: *Examination.* Baltimore, June 17-20. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 17-18. Sec., Dr. John A. Evans, 6029 Bellona Ave., Baltimore.

Massachusetts: Boston, July 8-11. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston.

Michigan:* *Examination.* Ann Arbor and Detroit, June 9-11. Sec., Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

Minnesota:* Minneapolis, June 17-19. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Examination.* Jackson, June 23-24. *Reciprocity.* Jackson, June 25. Asst. Sec., Dr. R. N. Whitfield, Old Capitol, Jackson.

Missouri: *Examination.* St. Louis, June 13-14. Ex. Sec., Mr. John A. Hailey, Box 4, State Capitol Bldg., Jefferson City.

Montana: Helena, Oct. 6-8. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

Nebraska: *Examination.* Omaha, June 16-18. Director, Mr. Husted K. Watson, Bureau of Examining Boards, Room 1009, State Capitol, Lincoln.

Nevada:* Carson City, Aug. 4. Sec., Dr. George H. Ross, 112 Curry St., Carson City.

New Hampshire: Concord, Sept. 10. Sec., Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: *Examination.* Trenton, June 17-20. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New York: Albany, Buffalo, New York and Syracuse, June 24-27. Sec., Dr. Stiles D. Ezell, 23 S. Pearl St., Albany.

North Carolina: *Written.* Raleigh, June 16-19; *Reciprocity.* Raleigh, June 17. Sec., Dr. Joseph J. Combs, 419 Professional Bldg., Raleigh.

North Dakota: *Examination.* Grand Forks, July 9-11. *Reciprocity.* Grand Forks, July 12. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, June 17-20. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus 15.

Oregon:* *Examination.* Portland, July 7-9. *Reciprocity.* Portland, July 25-26. Final date for filing application is June 16. Exec. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia and Pittsburgh, July 8-10. Acting Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

Rhode Island: *Examination.* Providence, July 2-3. Administrator of Professional Regulations, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Carolina: *Examination.* Columbia, June 23-24. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota:* Rapid City, July 15. Sec., Dr. C. B. McVay, Yankton Clinic, Yankton.

Tennessee:* *Examination.* Memphis and Nashville, June 11-12. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis.

Texas: Fort Worth, June 19-21. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth.

Utah: *Examination.* Salt Lake City, July 9-11. *Reciprocity.* Salt Lake City, June 20. Asst. Dir., Mr. Frank E. Lees, 314 State Capitol Bldg., Salt Lake City 1.

Vermont: *Examination.* Burlington, June 16-18. Sec., Dr. F. J. Lawliss, Richford.

Virginia: *Examination.* Richmond, June 12-14. *Reciprocity.* Richmond, June 11. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

Washington:* Seattle, July 14-16. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

West Virginia: Charleston, July 7-9. Sec., Dr. N. H. Dyer, State Office Bldg., No. 3, Charleston 5.

Wisconsin:* Milwaukee, July 8-10. Sec., Dr. A. G. Koehler, 46 Washington Blvd., Oshkosh.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: *Examination.* On application. Juneau or other towns in Territory as decided by Board. *Reciprocity. On application.* Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, June 17. Sec., Mr. H. D. Rhodes, University of Arizona, Tucson.

Colorado: *Examination.* Denver, Sept. 10-11. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

Connecticut: *Examination.* New Haven, June 14. *Address:* State Board of Healing Arts, 110 Whitney Ave., New Haven 10.

District of Columbia: *Examination.* Washington, Oct. 20-21. Sec., Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

Iowa: *Examination.* Des Moines, July 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Detroit and Ann Arbor, Oct. 10-11. Sec., Mrs. Anne Baker, 423 W. Michigan Ave., Lansing.

Nebraska: *Examination.* Omaha, Oct. 7-8. Director, Bureau of Examining Boards, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

Nevada: *Examination.* Reno, July 8. *Reciprocity. On application.* Sec., Mr. Frank Richardson, University of Nevada, Reno.

Oregon: *Examination.* Portland, Sept. 6 and Dec. 6. Sec., Dr. Charles D. Byrne, State Board of Higher Education, University of Oregon, Eugene.

Rhode Island: *Examination.* Providence, Aug. 13. Administrator of Professional Regulations, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: Vermillion, June 13-14. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Tennessee: *Examination.* Memphis, July 2-3. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

Texas: *Examination.* Austin, October. Sec., Brother Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

Washington: *Examination.* Seattle, July 9-10. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: *Examination.* Milwaukee, Sept. 13. Sec., Mr. W. H. Barber, Ripon College, Ripon.

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* Basic Science Certificate required.

DEATHS

Smith, Joseph Franklin ⊕ Wausau, Wis.; born in Huntington, Ind., July 24, 1869; Rush Medical College, Chicago, 1900; member of the House of Delegates of the American Medical Association from 1921 through 1943; for many years secretary and for one year president of the Ninth Councilor District Medical Society; past president of the Marathon County Medical Society; member of the Western Surgical Association and the American Association of Railway Surgeons; fellow of the American College of Surgeons; in 1937 was presented with the council award for distinguished service to medicine and the public by the State Medical Society of Wisconsin; member of the founders group of the American Board of Surgery; active in Boy Scout work and received the Silver Beaver Award; chairman of staff, St. Mary's Hospital; preceptor emeritus of surgery, University of Wisconsin Medical School in Madison; on the editorial board of the *Wisconsin State Medical Journal;* served as member of the board of directors of the Wausau Chamber of Commerce, and its president in 1920, 1921, and 1922; a member of the Wausau Rotary Club, in which he served as president, 1916-1917; died in Wisconsin General Hospital, Madison, March 22, aged 82.

Brooks, Barney ⊕ Nashville, Tenn.; born in Jacksboro, Texas, in 1884; Johns Hopkins University School of Medicine, Baltimore, 1911; professor of surgery at the Vanderbilt University School of Medicine from 1925 to 1951, when he became professor of surgery, emeritus; appointed to the faculty of Washington University School of Medicine in St. Louis as instructor in surgery in 1916 and rose to the rank of associate professor of surgery by 1924; past president of the Southern Surgical Association and the Nashville Surgical Society; member of the American Surgical Association, of which he had been vice-president, Southern Medical Association, the Society of University Surgeons, the American Society of Clinical Surgery, the International Surgical Society, Alpha Omega Alpha, and Sigma Xi; formerly treasurer of the Society of Clinical Surgery; fellow of the American College of Surgeons; member of the founders group of the American Board of Surgery; surgeon-in-chief, Vanderbilt University Hospital; on the advisory board of *Annals of Surgery* and the advisory council of *Surgery;* died in Vanderbilt University Hospital March 30, aged 67, of cerebral hemorrhage.

Kress, Louis Conrad ⊕ Buffalo; born in Buffalo Feb. 23, 1896; University of Buffalo School of Medicine, 1918; assistant professor of surgery at his alma mater; member of the Radiological Society of North America, Buffalo Academy of Medicine, American Public Health Association, and the American Radium Society; fellow of the American College of Surgeons; in 1935 appointed chairman of the state cancer committee of the American Society for the Control of Cancer; in 1939 named director of the then new division of cancer control in the state health department; director of the Roswell Park Memorial Institute, formerly known as the State Institute for the Study of Malignant Diseases, where he had been associated since 1919; affiliated with tumor service at Deaconess Hospital; consultant, tumor service, Mercy Hospital; consulting surgeon, Buffalo Hospital of the Sisters of Charity in Buffalo, and Gowanda State Homeopathic Hospital in Helmuth; died in Rochester March 13, aged 56, of coronary occlusion.

Tickle, Thomas Gooch, New York; born in Bluefield, W. Va., Jan. 29, 1892; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1916; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Society of Plastic and Reconstructive Surgery; fellow of the New York Academy of Medicine; past president of the New York Otological Society; professor of otolaryngology at the New York Polyclinic Medical School and Hospital, where he was attending otolaryngologist; served with the American Expeditionary Forces in France during World War I, rising to the rank of captain in the Army Medical Corps; attending surgeon at the Manhattan Eye, Ear and Throat Hospital and surgeon-in-chief of the Duel Memorial Facial Palsy Clinic; consulting otolaryngologist at French, St. Vincent's, and the Lutheran hospitals; died in Roosevelt Hospital April 26, aged 60.

Sheahan, George Maurice ⊕ Quincy, Mass.; born Dec. 2, 1882; Harvard Medical School, Boston, 1907; fellow of the American College of Surgeons; past president of the Norfolk South District Medical Society; formerly member of the school committee; served with the rank of major in the Harvard Unit, Royal Army Medical Corps, in 1915 and the rank of captain in the U. S. Army Medical Corps in 1918 to 1919; consulting surgeon, South Shore Hospital, Weymouth, Mass., and Norfolk County Hospital in Braintree; on the courtesy staff and member of the board of trustees, Quincy City Hospital, where he was formerly pathologist and bacteriologist; fire and police surgeon for the city of Quincy; died in Beth Israel Hospital, Boston, recently, aged 69, of uremia.

Nehil, Lawrence W. ⊕ Indianapolis; University of Michigan Medical School, Ann Arbor, 1929; member of the American Association of Thoracic Surgery and the American Trudeau Society; fellow of the American College of Surgeons; thoracic surgeon, Sunnyside Sanatorium in Indianapolis, James O. Parramore Hospital in Crown Point and "Silvercrest," Southern Indiana Tuberculosis Hospital in New Albany; associate thoracic surgeon, Methodist Hospital and attending thoracic surgeon, St. Vincent's Hospital, where he died March 2, aged 46, of prostatic abscess and nephrosis.

Lechenger, Gilbert Cecil, Houston, Texas; born in Houston, Texas, in 1887; Columbia University College of Physicians and Surgeons, New York, 1912; emeritus professor of radiology at Baylor University College of Medicine; member of the American Medical Association and the Radiological Society of North America; formerly secretary, treasurer, vice-president, and member of the board of censors of Harris County Medical Society; served during World War I; on the staffs of Hermann and Jefferson Davis hospitals; died recently, aged 64, of heart disease.

Andrews, Agnew, Tifton, Ga.; Emory University School of Medicine, 1919; died in Atlanta Jan. 10, aged 59, of mesenteric thrombosis and rheumatic heart disease.

Angell, Emmett Dunn, Butler, N. J.; Marquette University School of Medicine, Milwaukee, 1917; served during World War I; died Jan. 7, aged 72, of arteriosclerotic heart disease.

Ash, George Glenmore, Lexington, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1913; died in Holmes County Community Hospital Feb. 12, aged 71, of multiple sclerosis.

Baker, Nellie M., Altadena, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; died Feb. 24, aged 81, of coronary thrombosis.

Becker, A. Austin, Carrizo Springs, Texas; University of Buffalo School of Medicine, 1898; died Feb. 29, aged 78.

Brandau, George McMillan ⊕ Houston, Texas; Vanderbilt University School of Medicine, Nashville, 1919; assistant professor of clinical medicine at Baylor University College of Medicine; certified by the National Board of Medical Examiners; at one time director of the Beauregard (La.) Parish Health Unit, and senior assistant surgeon in the U. S. Public Health Service; served during World War I; died Jan. 6, aged 58, of cerebral thrombosis.

⊕ Indicates Fellow of the American Medical Association.

Cappello, Joseph, Portland, Me.; Regia Università degli Studi di Roma. Facoltà di Medicina e Chirurgia, Italy, 1931; member of the American Medical Association; on the staffs of the Mercy Hospital and Maine General Hospital, where he died March 17, aged 47, of coronary heart disease.

Celi, Anthony, Ozone Park, N. Y.; Regia Università degli Studi di Roma. Facoltà di Medicina e Chirurgia, Italy, 1938; member of the American Medical Association; served during World War II; affiliated with Horace Harding Hospital in Elmhurst and Kew Gardens (N. Y.) Hospital; died in Jamaica (N. Y.) Hospital March 10, aged 39, of injuries received in an automobile accident.

Darius, Dean James ⊕ San Carlos, Calif.; Creighton University School of Medicine, Omaha, 1933; for many years connected with the Bureau of Indian Affairs in the U. S. Department of Interior; died March 8, aged 43, of coronary thrombosis.

Dobriner, Konrad, New York; Ludwig-Maximilians-Universität Medizinische Fakultät, München, Bavaria, Germany, 1927; member of the American Society of Clinical Investigation and the Endocrine Society; professor of biochemistry, Sloan-Kettering Division, Cornell University Medical College and member of the Sloan-Kettering Institute; formerly on the staff of the Rockefeller Institute for Medical Research; died in Memorial Hospital March 10, aged 49, of myocardial infarction.

Filsinger, Frederick William ⊕ Buffalo; University of Buffalo School of Medicine, 1898; an Associate Fellow of the American Medical Association; served during World War I; consulting physician, Millard Fillmore Hospital, where he died March 20, aged 76, of coronary disease.

Gluckstein, Alexander Maxwell ⊕ New York; New York Homeopathic Medical College and Flower Hospital, New York, 1914; president of the Washington Heights Federal Savings and Loan Association; affiliated with Lutheran Hospital, where he died March 14, aged 61, of hypertensive cardiorenal disease.

Hain, Ira James, Reading, Pa.; Medico-Chirurgical College of Philadelphia, 1912; city health officer; on the staff of St. Joseph's Hospital; died in Reading Hospital March 5, aged 66, of cirrhosis of the liver.

Hanson, George Christian, Seattle; Northwestern University Medical School, Chicago, 1903; died in Doctors Hospital March 18, aged 80, of carcinoma of the bladder.

Isenberg, Alfred Percy, Camden, N. J.; Jefferson Medical College of Philadelphia, 1906; for many years medical examiner and surgeon for the Pennsylvania Railroad Company; on the staff of the Cooper Hospital; died March 15, aged 71, of uremia, cardiac decompensation and diabetes mellitus.

Kasso, Raymond Merritt ⊕ Solvay, N. Y.; Syracuse University College of Medicine, 1907; on the staff of Crouse-Irving Hospital; died in St. Joseph's Hospital March 19, aged 66, of coronary thrombosis.

Kelly, Edward Hayes, Monrovia, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1911; died Feb. 21, aged 63.

Kenyon, Steve Paschal ⊕ Dawson, Ga.; Emory University School of Medicine, 1918; member of the American Academy of General Practice; past president of the Medical Association of Georgia and the Georgia State Board of Medical Examiners; on the staff of Terrell County Hospital; died Feb. 28, aged 61, of carcinoma of the stomach.

Keyes, Robert, Ada Okla.; Chattanooga (Tenn.) Medical College, 1906; died Feb. 25, aged 74, of uremia.

Koutsky, John W., Omaha; John A. Creighton Medical College, Omaha, 1904; affiliated with Nicholas Senn Hospital; died Feb. 26, aged 78, of pulmonary edema.

Lint, Theodore ⊕ Rockaway Beach, N. Y.; Yale University School of Medicine, New Haven, 1923; served during World War I; received a citation from the Red Cross for his services during World War II; on the staff of the Rockaway Beach Hospital; died Feb. 28, aged 54.

McGuire, William Aloysius, Chicago; Northwestern University Medical School, Chicago, 1912; member of the American Medical Association; on the staff of St. Anne's Hospital, where he died March 8, aged 63, of chronic hepatitis.

McKinney, Samuel P., Los Angeles; Chicago Homeopathic Medical College, 1886; died March 12, aged 90, of coronary thrombosis.

Perrin, Henry E., Star Prairie, Wis.; Northwestern University Medical School, Chicago, 1894; an Associate Fellow of the American Medical Association; died in Lakeview Memorial Hospital, Stillwater, Minn., March 18, aged 82, of cerebral hemorrhage and arteriosclerosis.

Peterson, Frederick W., Pomona, Calif.; Northwestern University Medical School, Chicago, 1905; author of "Desert Pioneer Doctor"; died March 14, aged 83.

Rawiszer, Paul, Hixson, Tenn.; University of Georgia School of Medicine, Augusta, 1941; founder and owner of the Hixson Hospital and Clinic; president of the Hixson Kiwanis Club; died March 7, aged 36, of coronary occlusion.

Rivers, Dwight Gray, Crumpler, W. Va.; University of Maryland School of Medicine, Baltimore, 1910; member of the American Medical Association; died March 9, aged 66, of coronary thrombosis.

Ryland, John M. G., Richmond, Va.; the Hahnemann Medical College and Hospital, Chicago, 1919; member of the American Medical Association; died Feb. 2, aged 61, of cerebral hemorrhage and hypertension.

Schweitzer, Joseph, Buffalo; University of Buffalo School of Medicine, 1905; member of the American Medical Association; died in Millard Fillmore Hospital March 17, aged 68, of cerebral hemorrhage.

Sharp, Earl Levi ⊕ St. Cloud, Minn.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1902; formerly affiliated with Veterans Administration Hospital; died in Veterans Administration Hospital, Minneapolis, March 15, aged 72, of carcinoma of the prostate with metastases.

Shell, Kurt Ludwig, Pavilion, N. Y.; Albertus-Universität Medizinische Fakultät, Königsberg, Prussia, Germany, 1937; member of the American Medical Association; served as health officer of Covington; affiliated with St. Jerome and Genesee Memorial hospitals; died in Wyoming Feb. 17, aged 41, of injuries received in an automobile accident.

Simmons, John Douglas, Cleveland, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1915; served during World War I; died in City Hospital Dec. 24, aged 60.

Sloan, William Alfred, Caledonia, Miss.; University of Nashville (Tenn.) Medical Department, 1907; died Feb. 19, aged 68, of cerebral hemorrhage.

Smith, Eugene H. ⊕ Ogden, Utah; Omaha Medical College, 1901; associate clinical professor of pediatrics at the University of Utah School of Medicine; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; affiliated with St. Benedicts Hospital and Thomas D. Dee Memorial Hospital, where he was chairman of staff, 1947-1948, and where he died March 29, aged 74, of coronary thrombosis.

Smith, Norman Marshall ⊕ Minneapolis; the Hahnemann Medical College and Hospital, Chicago, 1902; at one time on the faculty of the University of Minnesota Medical School; member of the American Academy of General Practice; served on the staff of the City Hospital; died in Abbott Hospital Feb. 22, aged 76, of ruptured aortic aneurysm.

Sparks, Spurgeon, Orange, N. J.; Howard University College of Medicine, Washington, D. C., 1903; on the staff of the Orange Memorial Hospital; died in East Orange (N. J.) General Hospital March 19, aged 77.

Spencer, Charles F., Spokane, Wash.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; also a graduate in pharmacy; died March 17, aged 72, of myocardial infarction.

Standard, Sam Clarence ⊕ Seattle; Barnes Medical College, St. Louis, 1906; an Associate Fellow of the American Medical Association; member of the American Academy of General Practice; served during World War I; on the staffs of the Doctors Hospital and the Virginia Mason Hospital, where he died March 7, aged 73, of coronary occlusion.

Stout, Alfred Evan, Waynesville, Ohio; Ohio State University College of Medicine, 1934; member of the American Medical Association; on the staffs of Clinton Memorial Hospital in Wilmington, Miami Valley, St. Elizabeth, and Good Samaritan hospitals in Dayton, and the Greene Memorial Hospital in Xenia, where he died Feb. 15, aged 45, of injuries received in an automobile accident.

Stuart, Alexander Allen, Lincoln, Mich.; Grand Rapids Medical College, 1901; died in Bay City (Mich.) Samaritan Hospital Jan. 14, aged 79, probably of carcinoma of the stomach.

Summers, Samuel Jacob, Cameron, S. C.; University of Maryland School of Medicine, Baltimore, 1892; served as state senator; died Feb. 26, aged 83, of cerebral hemorrhage.

Sumner, Charles Montague, West Sullivan, Maine; McGill University Faculty of Medicine, Montreal, Canada, 1935; for many years chairman of the school board; served during World War II; affiliated with Eastern Maine General Hospital in Bangor; died Feb. 14, aged 42, of coronary heart disease.

Swezey, Harry Newton, LaFayette, Ind.; Rush Medical College, Chicago, 1901; member of the American Medical Association; served during World War I; on the staffs of the LaFayette Home Hospital and St. Elizabeth Hospital; died Feb. 13, aged 73, of acute dilatation of the heart.

Torrey, William Edward Jr., Moorestown, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1943; served during World War II; member of the American Physicians Art Association; died in Mount Holly recently, aged 33, of retroperitoneal hemorrhage and laceration of the liver due to an automobile accident.

Towle, George Pierce, Boston; Tufts College Medical School, Boston, 1909; formerly member of the school committee of Carlisle; for many years affiliated with Symmes Arlington Hospital; died Feb. 17, aged 71.

Tracy, James C., Mound City, Mo.; University of Louisville (Ky.) Medical Department, 1887; member of the American Medical Association; served as county coroner and physician for the county jail; died Jan. 7, aged 84.

Tubman, Thomas Henry, Syracuse, N. Y.; Cleveland University of Medicine and Surgery, 1896; formerly on the staff of Huron Road Hospital in Cleveland; died Feb. 8, aged 77, of coronary thrombosis.

Turner, William Robert, Harlingen, Texas; Chicago College of Medicine and Surgery, 1911; served during World War I; died Feb. 29, aged 65, of acute heart failure.

Tweedie, Arthur Maurice, Los Angeles; Western Reserve University Medical Department, Cleveland, 1908; served during World War I; died Feb. 13, aged 70, of acute hemorrhagic bronchopneumonia.

Tyrrell, Joseph Walter ⊕ Des Moines, Iowa; Drake University College of Medicine, Des Moines, 1900; served during World War I; died in the Veterans Administration Hospital Feb. 27, aged 80, of carcinoma of the bladder.

Van Zanten, Will, Brighton, Iowa; Drake University College of Medicine, Des Moines, 1911; died Feb. 1, aged 68, of cerebral hemorrhage.

Vermilye, John Hoagland, Flagler Beach, Fla.; Atlanta Medical College, 1914; served in various Veterans Administration hospitals; died in Halifax District Hospital, Daytona Beach, March 8, aged 63, of peritoneal tuberculosis.

Walker, Oliver Perry ⊕ Memphis, Tenn.; University of Wooster Medical Department, Cleveland, 1908; specialist certified by the American Board of Urology; fellow of the American College of Surgeons; served during World War I; attending urologist, Baptist Memorial and St. Joseph hospitals; visiting urologist, Methodist Hospital; died Feb. 7 aged 67, of cirrhosis of the liver.

Wall, Gregory Aloysius, Tulsa, Okla.; St. Louis Medical College, 1886; member of the American Medical Association; fellow of the American College of Surgeons; past president of the Tulsa County Medical Society; served during World War I; member of the staff of the Hillcrest Memorial Hospital; on the associate staff, St. John's Hospital, where he died Feb. 17, aged 86, of senility.

Watkins, John Armstrong, Albuquerque, N. Mex.; Medical Department of Tulane University of Louisiana, New Orleans, 1910; member of the South Atlantic Association of Obstetricians and Gynecologists; fellow of the American College of Surgeons; formerly practiced in Asheville, N. C., where he was affiliated with Memorial Mission Hospital and St. Joseph's Hospital; died in Fort Worth, Texas, March 13, aged 64, of Ayerza's disease.

Weiland, Carl Jr., Philadelphia; Jefferson Medical College of Philadelphia, 1908; died March 2, aged 66, of carcinoma.

Weiss, William, St. Louis; Washington University School of Medicine, St. Louis, 1906; instructor in pediatrics, St. Louis University School of Medicine; for many years physician in the hygiene department of the public schools; affiliated with St. Mary's Group of Hospitals; died in St. Anthony's Hospital March 17, aged 69.

White, Carl Wilma ⊕ Danville, Va.; Jefferson Medical College of Philadelphia, 1923; formerly medical superintendent of the Lynchburg State Colony in Colony; died in the Memorial Hospital Feb. 3, aged 53, of subdural hemorrhage.

Wiggins, William Edley, Indianola, Miss.; University of Nashville (Tenn.) Medical Department, 1910; died in Kings Daughters Hospital, Greenville, recently, aged 65, of heart disease.

Wiley, James Bertram, Oakland, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1897; veteran of the Spanish-American War; died Feb. 1 aged 80, of hypertensive cardiovascular disease.

Wilkinson, George Woods, Iowa City; State University of Iowa College of Medicine, Iowa City, 1941; member of the American Medical Association; served during World War II; affiliated with State University of Iowa Hospital, where he died Jan. 9, aged 35, of carcinoma of the larynx.

Williams, James H., Brooklyn; Meharry Medical College, Nashville, Tenn., 1934; member of the American Medical Association; on the staff of the Unity Hospital; died March 9, aged 48, of coronary disease.

Wilson, John Lebron, Hackleburg, Ala.; Birmingham Medical College, 1911; member of the American Medical Association; bank president; died in Franklin County Hospital, Russellville, Feb. 19, aged 68, of pneumonia, uremia, and arterial hypertension.

Worrell, Thomas Hendrick, Hillsville, Va.; Baltimore Medical College, 1912; died Feb. 23, aged 66, of acute coronary occlusion and hypertension.

Wright, Joseph Lee, Harrisonburg, Va.; University of Virginia Department of Medicine, Charlottesville, 1914; died Jan. 26, aged 62, of pneumonitis and arteriosclerotic heart disease.

Young, Charles Dean, Rochester, N. Y.; Harvard Medical School, Boston, 1890; member of the American Medical Association; one of the founders of the Rochester Academy of Medicine; died March 16, aged 89, of arteriosclerosis.

Young, William Dickson, Buffalo; New York Homeopathic Medical College, New York, 1894; member of the National Boy Scout Council from 1929 to 1937, and in 1931 received the Silver Beaver Award for his "distinguished service to boyhood"; died March 21, aged 80.

Yung, Julius Rudolph ⊕ Terre Haute, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; member of the International College of Surgeons; on the staff of St. Anthony's Hospital; died in Phoenix, Ariz., Jan. 29, aged 73, of acute myocardial infarction.

Zillmer, Adolph Louis William, San Mateo, Calif; Cooper Medical College, San Francisco, 1899; died Feb. 2, aged 73, of a cerebrovascular accident and arteriosclerosis.

GOVERNMENT SERVICES

NAVY

Research Conference Held at Submarine Base.—A three day conference on problems of assessment of personnel for duty in special military assignments was held recently at the Naval Medical Research Laboratory, Submarine Base, New London, Conn. The conference, attended by leading civilian and naval specialists in this field, was the culmination of months of intensive research on the techniques and procedures for assessment of candidates for the submarine service.

Prior to World War II the most important factors considered in assessing the capabilities of the individual were intelligence and aptitude. It became apparent, however, that the individual's personality and his attitude toward his job were as important as his natural ability to do the job. Subsequently the need for improvement stimulated research in human assessment and new techniques were developed. To apply the new techniques to the program of assessment of candidates for the submarine service at the Medical Research Laboratory, three well known consultants were employed: Harvey J. Locke, sociologist at the University of Southern California; Henry A. Murray, director of the psychological clinic, Harvard University; and Robert F. Bales, social psychologist, social relations department, Harvard University. The three consultants attended the conference.

Clark Wilson, Management and Marketing Research Corporation of Los Angeles, reported on the aptitude testing for submarine service that is being carried out by that organization under contract with the Office of Naval Research. A report was also made on a study of the reliability and validity of the assessment interview of submarine school candidates, which is being made under contract with the Office of Naval Research by William Crissy, Fordham University; Arthur Siegel, Queens University; and Siroon Pashalione, New York University. The conference was arranged by Com. Gerald J. Duffner (MC), officer-in-charge of the Medical Research Laboratory.

176 Internships to Be Available.—The Navy announces that 176 naval hospital internships will be available to medical school students who will graduate in 1953. Applications will be accepted and processed in accordance with the plan for internship appointments of the National Interassociation Committee on Internships.

Prospective Navy interns must meet all requirements for a commission in the Medical Corps, U. S. Naval Reserve, and must serve a minimum of 24 months of active duty, commencing on the date they start the intern training. On March 16, 1953, the deans of the medical schools and the hospitals participating in the matching plan will announce the results of the matching. Successful appointees will be commissioned lieutenants (jg) in the Medical Corps of the Naval Reserve and will receive the pay and allowances of that rank during their internship.

Further information may be obtained at any Office of Naval Officer Procurement, or by writing to the Surgeon General of the Navy, Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

Third Annual Medical-Military Symposium.—The third annual medical-military symposium for all the armed forces will be held Oct. 20-25 at the Naval Hospital in Philadelphia. According to the preliminary program, there will be general and special sessions, military medical and dental exhibits, and a social program that will include a visit to a hospital ship, a cocktail party and dinner, and the Navy vs. Pennsylvania football game. The topics of the general sessions are as follows: "The Physician as a "Medical Officer," "Aviation Medicine," "Disaster Preparedness," "Field Medicine," "Submarine Medicine," and "Neuropsychiatry." The general subjects for the special sessions will be surgery, medicine, neuropsychiatry, dentistry, neurosurgery, tropical medicine, ear, nose, and throat, orthopedic surgery, ophthalmology, dermatology, medical service corps, urology, and nursing. Numerous papers and discussions will be given on subdivisions of these general topics. Both promotion and retirement point credits will be given those in attendance. Hotel reservations will be made for those desiring to attend. All correspondence should be addressed to District Medical Officer, Building No. 4, U. S. Naval Base, Philadelphia 12, Pa.

First Postwar Class in Epidemiology.—The first class in epidemiology to complete its study at the Naval Medical School, Bethesda, Md., since the end of World War II graduated May 9. The course has been conducted by Com. Horace M. Gezon, who was also in charge of the last class which finished in 1945. Some 50 guest lecturers from the military services and schools of public health have participated in this teaching program.

During World War II over 300 medical officers and hospital corpsmen completed this course of instruction and were sent out to epidemiology units, many of them overseas. The problems that demanded the greatest attention were malaria, dengue, sandfly fever, dysentery, typhoid, infectious jaundice, streptococcal disease, meningitis, and typhus. The current class had a more extensive course of study than any of the wartime groups, including advanced training in bacteriology, virology, biostatistics, entomology, parasitology, and sanitary engineering.

PUBLIC HEALTH SERVICE

Survey of Mental Hospitals.—A survey conducted by the National Institute of Mental Health shows that during 1949 nearly 700,000 persons were patients in the 207 state mental hospitals.

Data provided by these institutions indicate that, despite new construction, overcrowding was a severe problem. For every 100 beds a hospital was designed to provide, there were 118 patients in the hospital. In nine states, the hospitals reported 30% or more overcrowding.

Shortage of trained personnel also proved a continuing problem. In 1949, state mental hospitals had only 2,100 physicians, including superintendents and interns, to provide treatment for the nearly 500,000 patients resident in the hospitals each day during the year.

The report shows considerable variation among states in the facilities available for care of the mentally ill. Though the ratio of patients to civilian population is slightly more than 3 per 1,000 for the United States as a whole, the figure for New York was 5.6 per 1,000 as compared to 1.7 per 1,000 for New Mexico. In the majority of cases, southern and western states have relatively fewer facilities for the mentally ill than the northern and eastern states.

Almost one-third of the patients with first admissions to the hospitals included in the survey were patients 60 years of age or older. Patients with diagnoses of psychosis accounted for over 80% of all first admissions diagnoses. The diagnosis of schizophrenia was reported in about 23% of all admissions, psychosis with cerebral arteriosclerosis in 16%, senile psychosis in 12%, and manic-depressive psychosis in 6%, these four categories accounting for more than half of all first admissions diagnoses.

Fellowships for Outstanding Students.—Seventy-one fellowships have been awarded to outstanding students, it has been announced by the Public Health Service. Awarded by the National Institutes of Health, the fellowships will enable students with marked abilities in the scientific disciplines to bolster their research interests. Under the fellowship program, applications are first processed by a central qualification board, which determines the eligibility of the applicant as a candidate. Respective institute specialty boards then select the most promising candidates.

Four types of fellowships are awarded: (1) for holders of bachelors' degrees, $1,200; (2) for holders of masters' degrees, $1,600; (3) for holders of doctoral degrees, $3,000; and (4) special research fellowships for those holding doctoral degrees who wish to supplement their work in their own field with studies in a related field. Stipends in such cases are determined by the Surgeon General at the time of award. Additional allowances are provided for candidates with dependents. All fellowship appointments are made for one year. Requests for renewals, however, can be made before expiration of the current fellowship. Research fellows who are United States citizens can pursue their studies at any qualified institution of their choice in the United States or abroad where programs and facilities are appropriate for the specific type of training elected by the fellow.

Food Sanitation Experts Visit Twelve Cities.—Twelve cities in key military areas were visited in April and May by a team of food sanitation and training experts representing the armed services and the U. S. Public Health Service. Their objective was to indoctrinate teaching personnel of military and civilian health groups in the use of a new publication, "Instructors' Guide—Sanitary Food Service." This guide, published by the Public Health Service, embodies new teaching methods, some of which are more effectively explained by demonstration. Designed for use by the armed services and state and municipal health departments in training food-service personnel, the manual also can be the basis of training programs conducted by managers of eating and drinking establishments. Food sanitation courses were initiated 13 years ago to help eating establishments meet the standards set up by state and local governments. The guide was developed in collaboration with the armed forces, particularly the Navy Bureau of Medicine and Surgery, the Office of Education, other federal agencies, and state and municipal health departments. The publication is available for $1.50 from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

More New Hospitals.—During the first quarter of 1952, 69 hospital projects were completed at an estimated cost of 39 million dollars, according to the Public Health Service. The projects made available an additional 2,500 hospital beds. Construction began on 65 hospital projects, which will provide 2,600 (estimated) more beds. Construction also began on 13 new health centers during the quarter. The estimated cost of this construction is 50 million dollars, of which the federal share will be 18 million dollars. As of March 31, a total of 850 hospital projects, which had been constructed under the Hospital Survey and Construction Act, were in operation. They cost over 440 million dollars, of which the federal share was over 141 million dollars.

VETERANS ADMINISTRATION

New Paraplegic Center.—Bids for the conversion of the West Roxbury, Mass., Veterans Administration Hospital to a paraplegic center will be accepted until June 24. The hospital is being converted to accommodate spinal cord injury patients currently being hospitalized at the Framingham, Mass., VA Hospital. All but 400 beds of the Framingham Hospital will be turned over to the Department of the Army this summer when the new 949 bed general medical and surgical hospital in Boston is operating.

The 400 beds at Framingham will be retained for treatment of paraplegic and certain medical and surgical patients until the West Roxbury conversion is completed. West Roxbury, now a 316 bed general medical and surgical hospital, will have accommodations for 150 paraplegic and 150 medical and surgical patients when the work is completed.

2,700 Employees Dropped.—Veterans Administration announces that about 2,700 administrative employees were dropped from its payroll up to May 31, 1952, to get down to the limitation in the budget for fiscal year 1953.

The reduction was nation-wide—about 2,500 in field offices and about 200 in the central office at Washington, D. C. Excluded from the cut are employees of the Department of Medicine and Surgery who staff the VA's 154 hospitals.

At the peak of its employment in February, 1947, VA had 226,131 persons on the payroll. As of March 31, 1952, the latest date for which complete figures are available, the payroll was down to 176,817 persons, including the 128,491 in the Department of Medicine and Surgery who are not affected by the current reduction in force.

Vacancies for Residents—The San Francisco Veterans Administration Hospital announces that there are several vacancies for residents in anesthesia, otorhinolaryngology, and neurological surgery beginning July 1, 1952. Physicians interested should write to Louis G. Brizzolara, M.D., Chief of Surgical Service,

ATOMIC ENERGY COMMISSION

Low Cost Research Reactor in Operation Under Water.—The development of a relatively inexpensive, low power nuclear reactor, unique in that it is submerged in water to protect operators from radiation, was announced May 19 by the Oak Ridge Operations Office of the Atomic Energy Commission. The structure is popularly known as the "swimming pool," since the reactor is submerged in a pool of water 20 ft. deep, 20 ft. wide, and 40 ft. long, in which it can be moved about. The reactor became "critical" on Dec. 17, 1950, and was placed in operation soon afterward. The entire structure cost less than $250,000 to construct, exclusive of fuel. Of this amount, the reactor core itself cost $58,400, the rest of the cost being for concrete work, the building, and auxiliary equipment. This "swimming pool" reactor has a continuous, full-load power rating of 10 kilowatts, at which it produces a maximum flux, or neutron density, of about 100 billion thermal neutrons per square centimeter per second.

This reactor has proved to be an economical and safe producer of radiation for certain purposes. It is one of several types of reactors which might be suitable for use at schools and other research and training institutions. It has a variety of potential uses in addition to its principal role as an aid in the testing of shields. It enables students and other investigators to perform critical experiments, study neutron distribution, and, within limits, study the effects on reactor operation of various patterns of arrangement of the fuel elements. Operated at full power, the reactor has a flux high enough to make long irradiation periods unnecessary for most experiments. With the neutrons available from this reactor, scientists can study phenomena of short-life beta and gamma radiation, a field that atomic scientists consider fertile. The "swimming pool" helps also in the expanding practice of chemical analysis by making specimen materials radioactive. In addition, since a neutron beam from this reactor can be collimated—that is, in a sense, "focused"—with ease, equipment for neutron diffraction research can be used with this equipment.

Report of Isotope Distribution.—More than 600 universities, hospitals, and research laboratories in 46 states are using isotopes produced by the U. S. Atomic Energy Commission for medical, biological, industrial, agricultural and scientific research, and medical diagnosis and treatment.

The Atomic Energy Commission has just issued a report, "Isotopes—A Five Year Summary of U. S. Distribution," which is available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for $1 per copy. The full report on isotope distribution for five years shows more than 18,900 shipments of radioactive isotopes and 1,500 stable isotopes have been made to users in the United States and 1,100 radioactive isotope shipments to users outside the United States.

A brief summary of the growth of the isotopes program and descriptions of their uses are included in the report with a list of the users and the titles of 1,400 technical reports and papers published on isotope work in the past two years.

MISCELLANEOUS

Rehabilitation After Visual Impairment.—The U. S. Office of Vocational Rehabilitation reports rehabilitation and employment of more than 8,000 persons with eye disabilities during the last fiscal year. Of these, 3,000 were blind and 1 in 10 of the group had never worked before rehabilitation. Since the start of the federal-state vocational rehabilitation program in 1943, about 48,000 persons with visual impairments have been rehabilitated to the point where they can be employed.

FOREIGN LETTERS

ARGENTINA

Duration of Life.—The general director of the National Statistical Service has published information on the life expectancy of the people of the Argentine Republic for the years 1914 and 1947. During the third of a century between these two years there has been a definite increase in life expectancy in this country as in the United States, although that for Argentina is not as high as that for the United States. In 1914 the figures were 45.2 years for men and 47.5 for women; in 1947 they were 56.9 for men and 61.4 for women. The real increase was 11.7 (25.9%) years for men and 13.9 (29.3%) years for women. The principal reasons for the present longer mean duration of life are the decreases in child mortality and in the prevalence of infectious diseases. Life expectancy is higher than the average in the large cities and the eastern agricultural region, and it is lower in the northern and western provinces.

Forensic Medicine.—The First National Conference on Forensic Medicine was held in Buenos Aires during the first week of March. The program was organized by the Ministry of Public Health, and the opening speech was delivered by the Minister of Public Health, Dr. Ramon Carrillo. The final report was given by Dr. Lorenzo A. Garcia, technical assistant secretary of the ministry. The conference expressed the hope that the sanitary code prepared by the ministry will be promulgated in the near future. Recommendations were passed in favor of increasing the ministry's intervention in professional activities in such areas as requirements for the professional license, requirements for the title of specialist and the public announcement of its bestowal, and regulation of the practices of auxiliary medical personnel. One declaration recommended enforcement of the respect due to medical secrecy and asked severe penalties for its breaking and suppression of conditional penalties in such cases. The conference recommended that professional salaries be established by the Ministry of Public Health for the whole country.

Geriatrics.—The two societies devoted to the study of old age have merged into a new society called the Argentine Geriatric Association (Asociacion Argentina de Geriatria). The new president is Dr. Enrique Rottger.

BRAZIL

Experimental Leishmaniotic Histiocytoma in Hamsters.—Dr. F. Guimarães, of the Oswaldo Cruz Institute, is carrying out experimental studies on American leishmaniasis, the first three of which, relating to the occurrence of Leishmania braziliensis in hamsters and in mice and the behavior of six different strains of the parasite in those rodents, have been reported in previous letters. In the studies, the findings were similar to those observed in kala-azar independently of the route of inoculation. In a fourth paper, he recently reported the study on the lesions produced by a new strain of L. braziliensis obtained from a case of nodulotumoral leishmaniasis, which occurred in a locality of the Amazon River valley, a region of equatorial climate. The clinical aspects of this case are peculiar, mainly owing to the presence of dermal tumors formed by the proliferations of histiocytes, many of which are full of Leishmania. This strain caused no visceral lesions when injected in hamsters. Out of the 14 hamsters inoculated, only 2 animals showed a low number of parasites in smears made with material from the liver, and 1 animal, in smears from the heart. No parasites were found in numerous sections of those organs; however, in eight hamsters inoculated through the skin of the snout, all developed nodulotumoral lesions, clinically and histopathologically similar to those of the patient. Histopathologically, in both the patient and the hamsters, the author found a rich proliferation of histiocytes in the derma, which was full of parasites (leishmaniotic histiocytoma). One of the hamsters, remaining infected during nine months and with a persistent lesion of the snout, showed metastatic lesions with the same histological structures in the ears and the anterior right paw. None of the nine hamsters inoculated through the peritoneal route had skin lesions. In two of them and three of the eight inoculated through the skin of the snout, periorchitis, similar to that obtained in several hamsters inoculated with the six strains of L. braziliensis above mentioned, developed. Periorchitis, a lesion caused by all the species of Leishmania, is the subject of an experimental study to be reported in the next paper of the series, relating to the pathogenicity of the above cited Amazonian strain. The dissimilarities between this strain and the other six previously referred to suggests to Dr. Guimarães that he has probably met a particular variety of the species L. braziliensis.

Death of Dr. André Dreyfus.—Dr. André Dreyfus, professor of biology at the school of philosophy, University of São Paulo, and a former dean of that school, died a few days ago at the age of 55. Dr. Dreyfus had formerly been professor of histology at the medical school of the same university and was notable in research in embryology and genetics. He wrote several books on his special field, the most widely known being his "Life and Universe." A few years ago, he gave a course on genetics and embryology at the Sorbonne in Paris.

DENMARK

The Problem of Hospital Laboratories.—A lively discussion in the medical press has focused attention on hospital laboratories, with special reference to the following questions: Should hospital laboratories be centralized or decentralized? What should be the qualifications of the head of a hospital laboratory? What should be his position in the hierarchy of hospital administration? The State Serum Institute in Copenhagen has for a long time held a dominating and well-deserved position in the hospital laboratory world. Here the serologic tests for syphilis for the whole of Denmark have been centralized resulting in unification of the study and control of syphilis for the entire country. With its well-trained staff, the State Serum Institute has made invaluable contributions to medical research for a whole generation. Yet in even so small and compact a country as Denmark, there is a growing appreciation of the necessity for decentralization, with facilities for close cooperation, more or less under the same roof, of laboratory experts and hospital doctors. The possibility of totalitarian warfare is also an argument in favor of decentralization.

Not long ago the qualifications of the head of a hospital laboratory were comparatively simple. His position was subordinate to that of the head of some medical or surgical service, and he was rather the humble instrument than the respected equal of his colleagues in charge of hospital beds. It has been suggested that this unsatisfactory state of affairs still exists to a certain extent in some areas in which a shortage of funds has checked the promotion of laboratory workers from subordinate positions to positions of relative independence. Hospital physicians with administrative control of laboratory workers have, however, disclaimed any ambition to dominate laboratory services, the technical complexity of which grows yearly. The head of a hospital laboratory, who deals with bacteriological, biochemical, and other widely different research, is expected to help physicians and surgeons with their respective problems and should, therefore, himself be a physician, with clinical as well as laboratory experience. He should, it is urged, rank with the head of an x-ray service, with corresponding emoluments. At the present time, the organization of hospital laboratories in

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The items in these letters are contributed by regular correspondents in the various foreign countries.

Denmark is compared unfavorably with the corresponding organization in Sweden, where, in some cases, the heads of laboratories may supplement their salaries with private practice (charges for tests and examinations).

This discussion about Danish hospital laboratories is so far from being a mere storm in a teacup that it represents one of the most serious hospital administrative problems at the present time. In a leading article on the subject in a recent number of the organ of the Danish Medical Association, *Ugeskrift for Laeger*, it is plainly stated that, apart from certain areas with rapidly rising populations, the country is much less in need of more hospital beds than of improved technical equipment for treatment and examination. It is necessary that laboratories be developed that have adequate accommodations and apparatus, expert leadership, and well-trained staffs. Large hospital laboratories should be in the charge of specially qualified doctors, who should be provided with better trained assistants than has been the case in the past.

Crisis in Psychiatry.—In an address delivered last February, Prof. Villars Lunn paid a generous tribute to the contributions to psychiatry made by Professors August Wimmer and Hjalmar Helweg. His primary emphasis, however, was on the criticisms to be made of the practice of psychiatry and the neglect of recent advances in this field in Denmark at the present time. Much has been discovered, but little has been done to put these discoveries into practice. In Professor Lunn's opinion, psychiatry is at present undergoing an internal crisis, because of a clash between followers of the classical descriptive psychiatry and those of the new dynamic psychiatry, which has not yet crystallized into a practical form. During the past 30 years the attitude of workers in psychiatry has shifted from a fatalistic nihilism to a healthy optimism, and the field has been developed from a speculative philosophy to a scientific discipline in line with the other medical disciplines. Shock treatment, leukotomy, and other therapeutic measures now offer opportunities for successful treatment of the so-called endogenous psychoses. The public knows about these advances and expects physicians to utilize them for the good of all; however, the teaching of psychiatry has hitherto played too small a part in medical education, and specialists in psychiatry are still far too few. There is great room for improvement in the full employment of psychiatric advances in psychiatric institutions. On the subject of hospitals for the mentally ill in Denmark, Professor Lunn said that their evolution from inhuman isolation hospitals to humane welfare institutions and thence to rational centers of treatment has stopped half way. These hospitals or asylums are too few for the number of patients they must accommodate, they are understaffed, and their development has lagged tremendously behind that of the somatic hospitals, since they have not kept pace with modern developments in psychiatry.

Nationalized Pharmacy.—The sale of drugs in Denmark may be said to be already nationalized or socialized in certain respects. The number of pharmacists and their distribution throughout the country are regulated by the state. The character of the drugs they sell and the prices they charge for them, to mention only two items, are also regulated by the state. The subordinates on a pharmacist's staff rank in some respects as servants of the state. The need for simplification and reorganization of the whole pharmaceutical industry led, early in 1947, to the appointment of a government commission charged with the revision of the laws concerned with the manufacture and control of drugs. After working on this subject for five years and after issuing preliminary recommendations on certain features of the problem, this commission published its final recommendations in February, 1952. They are of interest to the medical profession as well as to the pharmaceutical industry, for doctors are obliged by law to guard the interests of the public in connection with pharmaceutical preparations, and they are expected to observe reasonable economy in prescribing drugs for which health insurance has to pay.

The commission has been helped during the past five years by experts in various branches of the field and has worked through six different subcommittees, each with its own special field of investigation. It has not succeeded in producing a unanimous report, but it has collected much valuable information that should aid in decisions to be made by the government. At the present time, the Danish pharmaceutical industry is highly prosperous, and, in 1951, the value of its total production was about 105 million kroner. About two-thirds of these goods were exported, and they contributed more than a little to strengthening the exchange value of Danish currency. It is intimated in certain quarters that tampering by the government with this export industry may have serious effects. If the work of the commission leads to the unification of pharmaceutical legislation, it will have achieved one of its main objectives. It should be noted in passing that the nationalization or socialization of the pharmaceutical industry has become a burning question also in Norway and Sweden. In the latter country an official report was issued on the subject as recently as September, 1951.

Rationalized Hospital Reports.—In a letter to *Ugeskrift for Laeger*, Dr. Ole Bang has drawn attention to the wastefulness involved in the preparation of separate hospital reports by each hospital. At present every respectable hospital issues a beautifully printed annual report of its activities. Not all of these activities are dealt with on a uniform scale, and their recording requires much time on the part of doctors and secretaries. Would it not be a great saving of time, energy, and money, Dr. Bang suggests, if the material for these reports were to be dispatched to some central office, where they would be remodeled according to a uniform plan? He calculates that, with about 100 hospitals publishing as many annual reports, the total cost may well amount to a quarter of a million kroner. If the funds, or only a fraction of them, that are expended in this piecemeal fashion could be put at the disposal of a central organization with a well-trained staff, it should make possible the issuance of reports that would be suitable for comparison with those of other hospitals.

On behalf of the Danish Public Health Service, Dr. Marie Lindhardt has answered Dr. Bang, explaining the steps already taken or shortly to be taken towards rationalization of hospital reports. In 1945, a new system for drafting hospital reports was introduced, with as many as 23 different groups of diseases to be entered in such reports. This grouping was based on the "diagnosis list" devised by Prof. H. C. Gram. It was, however, obvious that this system was far from ideal, although it introduced a certain degree of order and clarity into these reports. The new international nomenclature for the classification of diseases promises further unification and clarification of hospital reports, and, beginning Sept. 1, 1952, a final survey will be carried out in certain hospital departments in order to arrive at a system that will satisfy the objections hitherto raised.

LONDON

The Social Incidence of Coronary Disease.—A comparison of the social incidence of coronary disease (including angina pectoris) and myocardial disease in England during the period 1930-1932 and in 1949 has been made by the chief medical statistician, General Register Office, and reported in *The Lancet*. In the period 1930-1932, 37% of deaths of men aged 45 to 74 years were caused by coronary disease, and 20% of deaths from myocardial disease occurred in social classes 1 and 2 (professional occupations). In social classes 4 and 5 (unskilled workers), the corresponding figures were 22% for coronary deaths and 38% for myocardial deaths. In 1949, 24% of coronary deaths and 18% of myocardial deaths occurred in social classes 1 and 2, compared with 27% for coronary and 37% for myocardial deaths in social classes 4 and 5. In other words, assuming that there has been no great transfer of population from one social class to another and no pronounced age changes in the various social classes, the gradient of mortality from myocardial disease, increasing in the period 1930-1932 from social class 1 to social class 5, was still present in 1949, but the contrasting gradient of mortality from coronary disease, declining between 1930 and 1932 from social class 1 to social class 5, was less evident in 1949. An analysis of the deaths of men aged 45 to 74 years caused by coronary or by myocardial disease in the period 1930 to 1932 and in 1949, in each social class, shows that, for all men in this age group, the proportion of coronary deaths (expressed as a percentage of the combined total of deaths from coronary and from myocardial disease) increased from 20 to 61%. In the period 1930-1932, the proportion of deaths from coronary disease in social class 1 (44%) was four times greater than in social class 5 (11%). In 1949, the corresponding figure was 76% in social class 1 and 52% in social class 5; i. e., the proportion of such deaths in social class 1 was only 1.5 times greater than in social class 5. In 1949, in social class 3 (skilled workers), the proportion of deaths from coronary disease was highest among clerical workers (71%) and lowest among miners (47%).

The Health of Scotland.—Health statistics published for Scotland for 1951 show that the birth rate was 17.7 per 1,000 of the population, the lowest since World War II and equal to the average for the period 1935-1939. The death rate of 12.9 per 1,000 of the population was 0.5 above that for 1950. The infant mortality rate of 37 per 1,000 live births was the lowest ever recorded, as was the neonatal death rate of 22 per 1,000. The stillbirth rate of 27 per 1,000 births was the same as in 1950, and the maternal mortality rate, 1.1 per 1,000 live births and stillbirths, was also unchanged from 1950. The most satisfactory feature of the year was the drop in the death rate from respiratory tuberculosis to 37 per 100,000 of the population, compared with 66 in 1948. The notification rate did not decline as satisfactorily, being 154 compared with 167 in 1949. Coronary heart disease accounted for 1 death in 10, compared with 1 in 100, 20 years ago. Some interesting sidelights are thrown on the cost of the National Health Service. The cost of prescriptions was almost £21,000,000, which is equivalent to an average cost of 4*s*.7*d*. per person. The average cost per hospital inpatient was 19*s*.8*d*. per day; for each outpatient attendance, it was 4*s*.8*d*. Since charges for spectacles and dentures were introduced last May, applications have dropped about 55% for spectacles and about 30% for dentures.

Employment of Old Persons.—At a recent conference organized by the National Old People's Welfare Committee, the Minister of Labor and National Service reported that the percentage of persons of pensionable age now employed is lower than it was 20 years ago. Of a total of 6.5 million persons of pensionable age, of whom 2 million are men aged 65 to 70 or women aged 60 to 65, only 1 million are working. He stated that it was the policy of the government to encourage the employment of older persons; the aim was that no one should be denied employment on account of age alone, as long as he or she is willing to work. Referring to the setting up of the National Advisory Committee on the employment of older persons, he expressed the hope that it would advise on such problems as the promotion of younger employees, fixed retiring ages, and arbitrarily fixed upper limits for recruitment. The chief medical officer of the London Transport Executive considered that "industry wants its old people, and it wants them badly. . . . Among other things, they have a steadiness, a loyalty, and a calm influence for good human relations." Like the Minister of Labor, he was opposed to the segregation of older persons in separate workshops when this could be avoided. He was of the opinion that "most men could remain in their jobs at least several years beyond the present retiring age, with benefit to themselves, their work, and their colleagues."

John Hunter Memorial.—On Feb. 14, the president, the council, and members of the Royal College of Surgeons attended a special service at St. Martin-in-the-Field for the unveiling and dedication of a memorial plaque commemorating the fact that John Hunter was originally buried in the vaults of the church. The inscription on the plaque, which was unveiled by Sir Henry Dale, reads as follows: "Erected by the Royal College of Surgeons of England to record that there rested in these vaults from 1793 to 1859 the body of John Hunter, founder of scientific surgery. After a long and diligent search initiated and carried out by Frank Buckland, a member of the college, the remains were identified and transferred to Westminster Abbey."

The story behind this occasion is an interesting one. The remains of John Hunter were buried in the vaults of St. Martin-in-the-Field in 1793. In 1859, Frank Buckland, who was at that time assistant surgeon to the Second Life Guards and who had qualified at St. George's Hospital, Hunter's former hospital, happened to see the notice of an order requiring the vaults of St. Martin's to be cleared of coffins. Buckland, a fervent admirer of Hunter, decided to identify Hunter's remains and ensure that they were treated with the respect they deserved. The task was not an enviable one, as 3,260 coffins were removed and inspected, and Hunter's was second to the last to be removed. It was removed to Westminster Abbey, where it now lies between the resting places of Ben Jonson and Sir Charles Lyell.

Dangers of Hypnotism.—Hypnotism is at present undergoing one of its "comebacks" in popular favor. Its appearance in music halls has become so popular that questions about the possibility of banning it as a form of public amusement have been asked in Parliament. The president of the Royal College of Physicians has now written a strong letter to *The Times*, in the course of which he says, "May I express what I know to be the strongly held opinion of the medical profession in this country that hypnotism is subject to dangers and abuses which make it unsuitable for public demonstration or experiment by persons without scientific qualifications?" An interesting response to this letter is one from the president of the British Psychological Society, from which the following statement is excerpted: "While in agreement with the excellent letter of the President of the Royal College of Physicians on the dangers of stage hypnotism and the desirability of limiting the practice of hypnotism to medically qualified people, I would like to point out that such medical qualifications should also include adequate qualification in the sciences of psychology and psychiatry, and training in the practice of analytical psychotherapy."

"Cathode Rayitis."—The following excerpts are taken from the recently published annual report of the school medical officer for Hertfordshire: "The children look permanently tired and are drowsy in class. After questioning a number of these children it seems that television has aggravated the difficulty of getting them to bed. . . . Perhaps, before long, 'television syndrome' or 'cathode rayitis' will make an unfamiliar appearance in the up-to-date medical textbooks. . . . Apart from the harm done by constant late hours, there is also the effect of eyestrain on those with defective vision to be considered. Moreover, with technical developments, larger and brighter pictures, suitable for daylight viewing, are now commonplace. It is no unusual thing when visiting homes to find youngsters grouped around the television in a stuffy room, perhaps watching the broadcast of some sporting event, when normally they would themselves have been enjoying exercise in healthy fresh air."

PARIS

Tetany Crises in the Course of *p*-Aminosalicylic Treatment.—At the Nov. 23, 1951, meeting of the Medical Society of the Paris Hospitals, Drs. Albeaux-Fernet and Danel and their associates reported two cases of tetany crisis occurring during the course of treatment of pleurisy with *p*-aminosalicylic acid administered intravenously. The first case was that of a 19-year-old boy, who had been treated with streptomycin and *p*-aminosalicylic acid orally until gastric intolerance, on the 15th day, led to the institution of intravenous administration of *p*-aminosalicylic acid. On the fifth day, a typical tetany crisis occurred, which lasted for an hour. Provoked hyperpnea reproduced the tetany crisis, which ceased five minutes after an intravenous injection of 10 cc. of calcium gluconate. The second patient was a 22-year-old nurse, who was given 1 gm. of streptomycin and 15 gm. of *p*-aminosalicylic acid intravenously. Fifteen minute after the first perfusion (24 to 28 drops per minute), a typica tetany crisis, accompanied by heart failure, occurred. Later, *p*-aminosalicylic acid was given orally without further inciden These two cases of tetany simulated an intense decompensate alkalosis, a seeming paradox during treatment with an acid; ho ever, inquiry revealed that the *p*-aminosalicylic acid used was p into the solution for perfusions by buffering with an alkaline su stance, the exact composition of which could not be ascertaine by the authors, but it was this alkali that was responsible f the two reactions.

COMMISSION ON CHRONIC ILLNESS

This paper has been prepared from the viewpoint of the general practitioner, at the request of the Advisory Council on Professional Education of Commission on Chronic Illness. Statements and conclusions by the authors do not necessarily represent the opinion or policy of the Commission.

EMPLOYABILITY OF THE CHRONICALLY ILL AND DISABLED

Howard A. Rusk, M.D.
James F. Garrett, Ph.D.
Henry Viscardi Jr., B.S.
and
Eugene J. Taylor, M.A., New York

Intent on remaining at peace, the democracies of the Western World have determined that under current world conditions the most effective way of achieving that purpose is to remain strong through defense preparation. In the mobilization of our material, human, financial, social, and spiritual resources for defense, it is readily apparent that the major factor of our success will be dependent on manpower. This has been evident since Adam Smith advanced this thesis in his "Wealth of Nations" and the world turned from an agricultural to an industrial economy.

It is a matter of simple arithmetic to see that today the North Atlantic Pact countries fall far short of our potential enemies in the gross number of men available for military service. On the basis of our past performance it seems obvious, however, that our industrial power, when fully mobilized, can more than offset this numerical advantage. If the latest developments in science and engineering through research, coupled with mass production techniques, are to balance the scales in our favor, our nation must have sufficient manpower to make full use of our industrial potential.

To achieve the goals of our current national plans for mobilization for the maintenance of a strong civilian economy requires full and effective utilization of our manpower resources. Manpower can be developed, but, unlike many industrial resources, it cannot be stockpiled. Total manpower resources are fixed in number, and, unless fully developed and effectively used, can become the limiting factor in production and in military strength.

Today the manpower situation generally is much more critical than it was in 1940. Then 8,000,000 persons were unemployed; in May, 1951, the unemployment level stood at 1,609,000—the lowest since World War II ended in August, 1945. The number of employed citizens at that time was 61,193,000.

In his last quarterly report to the President issued April 1, Mr. Charles E. Wilson, former Director of Defense Mobilization, reported that defense employment has risen from 2 million at the time of Korea to 5.5 million at the end of 1951 and close to 6 million at the present time. To accomplish the national security program as now scheduled, he stated, almost 2 million defense workers will have to be added during the rest of this year to the nearly 6 million now employed. In 1951, 4 million of the "extra" workers brought into the labor force came from the ranks of women and older workers. A high percentage of "extra" workers in the future must come from the ranks of the physically handicapped.

Recognizing this, the Office of Defense Mobilization last July established a special Task Force on the Handicapped to recommend methods of more effective use of handicapped workers in defense production. The Task Force, composed of distinguished leaders in medicine, industry, labor, vocational guidance, selective placement, and voluntary health organizations, produced in its report issued in January one of the most significant documents on rehabilitation published to date. In its opening paragraph, the report calls attention to the recognition by Congress, governmental agencies, business and labor groups, and others concerned with defense production of the impact on production of the loss to our labor force of the 621,000 young Americans who were inducted into the armed forces by the Selective Service System during the year ended Sept. 30, 1951. It then adds pointedly, "Yet, during the same year, our economy lost 250,000 workers through disablement as a result of injury and disease. We lost them without fanfare, through the 'back door' of our national consciousness with too few of us realizing the enormity of the loss."

While the loss of those entering the military service is in the national interest and is temporary, the report stresses, the loss of those suffering disablement is, for the most part, unnecessary and at the expense of the national interest. In addition, it asserts, at the present rate of rehabilitation in this country, a high percentage of the disabled group are lost permanently. After evaluating the results of available surveys, the Task Force concluded that there were, conservatively, 2 million physically handicapped persons in this country who could and should be rehabilitated and placed or advanced in employment. This number, they said, will increase substantially in coming years as the result of medical advances that prevent death but leave survivors disabled, and the high incidence of chronic disease and disability that is resulting from our becoming a nation of older persons.

In urging an expansion of services for rehabilitating and employing more handicapped workers at the national, state, and community levels, the Task Force asserted that the nation was now in a position to do more to overcome the handicapping effects of disability than at any other time in our history. We have reached this favorable position, the report stated, because of advances in medical knowledge, the development of rehabilitation centers, improved methods of education for the handicapped, better prosthetic aids, broadening of services under the federal-state vocational rehabilitation programs, expanded rehabilitation services for veterans, expansion of voluntary services and of insurance and related coverage, better placement methods, and increased understanding by management, labor and the public.

Basic to all of these developments, the Task Force pointed out, is our changing concept of disability, "When physical standards were drawn up during the first and second decades of this century," they noted, "they were influenced by the 'anatomical' concept of medicine, which was then in sway. Competence was measured in terms of anatomical perfection. A man was either fit or unfit to work, depending on whether or not he was anatomically whole. It was all or none. A man could do the whole job or none of it. He was disabled for all work if he was disabled for any part of it." With the development of the physiological or functional concept and the specialization and subdivision of jobs into their components, the "perfect anatomical specimen" concept of man is no longer valid in determining suitability for employment.

The general framework for strengthening services necessary to evaluate, prepare, and fit the chronically ill and disabled into employment already exists among the public and voluntary agencies provided maximum, practical, and coordinated use is made of them.

The emphasis on the need for manpower has focused attention on the community responsibility toward the chronically ill and disabled worker, particularly in the efforts of a group of businessmen in New York City known as the "Just One Break" Committee. This group of lawyers, bankers, personnel directors, newspapermen, and businessmen have founded a permanent association and become a Division of the New York University-Bellevue Medical Center Institute of Physical Medicine and

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From the Department of Physical Medicine and Rehabilitation, New York University College of Medicine.

Rehabilitation to represent the community in providing employment opportunities for the severely disabled worker. Their primary goal is research into the problems which the labor-management team is experiencing in their efforts to overcome existing prejudices and misunderstandings of the disabled.

Their program is founded on the belief that the community, not exclusively the medical-social welfare groups but the entire community, not only has the duty to support the permanently disabled individual, but also the duty to see to it that he shall be given the opportunity to contribute his share to the common economic effort. It has been clearly demonstrated during World War II that the disabled compete successfully with their more fortunate fellow workers. Yet the industrial concept of physical fitness readily reverted to its prewar status when the emergencies were ended. JOB has set up a permanent organization that is aware of the humanitarian as well as economic reasons for halting the present entirely needless waste of our human resources. If society demands their material production in a period of critical emergency and manpower shortages, then it has the duty to encourage the chronically ill and disabled to live not only within the limits of their capabilities, but also to the maximum of their capacity for self-development and enjoyment in free competition with their fellow man.

This represents an interesting experiment in medicoeconomic planning coupled with coordination of training and personnel policies by all interested groups in the community, including industrial, labor, military, and civilian leaders. The result, not only in creating long-range understanding, but in the placement of chronically ill and disabled individuals, has been dramatic.

In adjusting the concept of the relation of physical fitness to the physical demands of the job to be performed, this group has prepared a framework of understanding disability in the economic sense. They have indicated that, in the simplest possible terms, economic disability is inability by reason of physical or mental defects to earn a living, and they have recognized that economic disability may be, in many cases, the result of prejudice and misunderstanding which has warped the industrial concept of physical fitness. They have pointed out that the best results from the medical standpoint of a program of physical medicine and rehabilitation may result in economic disability unless the full resources of the community can be coordinated with the medical team to provide productive work for those who are able to produce.

The staggering price we pay for the luxury of this misunderstanding of industrial physical fitness is overwhelming. The labor force today is somewhat in excess of 60 million people. If we compute disability among this group alone on the basis of five days of compensable disability per worker per year, it will give a total of 300 million days per year. Calculating wage loss at $6 per day, we have a loss of $1,800,000,000. If we estimate production loss at about twice this figure, we can estimate total annual loss from disability of workers alone as in the neighborhood of 5.5 billion dollars. The magnitude of this figure, which ignores all disability outside the labor force, is demonstrated to the community by JOB when they point out that this loss equals approximately the total surplus of all active banks in 1946 and exceeds the total capital funds of all national banks for the same year. It also exceeds the total installment credit for 1946, the total life insurance premiums for 1946, and the total loss from fire in the country for the years 1937 to 1946.

The awareness of community responsibility in the pilot study set up by the "Just One Break" businessmen's group in New York City is proving that the absence of disease does not necessarily mean physical fitness from the industrial standpoint. When the community realizes that employers cannot use the term "physically fit" in reference to employment unless it is qualified by asking physically fit for what, there will be a great deal less disability in the economic sense. The community, at great savings in terms of continuing support, will provide the disabled with the opportunity to know temporal as well as spiritual rights.

Although industry as a whole has discriminated against hiring the chronically ill and disabled worker because of assumptions that he was less efficient and more accident-prone, the strongest supporters of the utilization of chronically ill and disabled workers are those concerns that have hired large numbers of such workers. It should be pointed out that, although the great industrial concerns have thousands of jobs for disabled workers, they actually hire but 10% of all workers. It is to small industry, commerce, and the service trades that the great majority of the chronically ill and disabled must turn if they are to be employed.

However, this end result of placement into competitive employment must be predicated upon an adequate rehabilitation program which takes into consideration not only the physical, but also the psychological, social, and vocational aspects of the client. Such a program has been operating at the Institute of Physical Medicine and Rehabilitation for the past three and one-half years.

As has been pointed out, it is not enough to consider the physical disability of the patient in his program planning. Rather, emphasis should be placed on his physical capabilities in very specific terms, such as his capacity for self-care, for walking and traveling, for use of his hands, and for intelligibility of speech. So frequently we hear of a patient's work-tolerance, but rarely do we hear of tolerance for what. To be realistic and expect any reasonable prospect of employment, one must concentrate on preparing the patient for the physical demands of daily living. Not all patients can be so prepared and so, for some, home-employment or sheltered-workshop employment furnish the answer. But most can and should find their way into regular employment channels.

Too frequently, however, consideration is given only to the physical aspects of the disabled person. It is a well-known fact, however, that most physically normal persons lose their jobs because of personality defects. It is into this pitfall that physically impaired persons also tend to fall. This is because all too frequently those who have had a prolonged illness or hospital stay convalesce physically but not psychologically. When a good rehabilitation viewpoint is not maintained, most patients become debilitated psychologically. This is very important when considering a disabled individual's potentiality for work, since many of the poor psychological habits which he may have built up in the hospital or during home treatment may be the very ones to make him vocationally objectionable.

It is not uncommon for a patient in the course of hospital routine to become egocentric, hypochondriacal, dependent, and regressive, and these are four excellent reasons for failure on the job. These personality habits do not clear up automatically as the patient improves physically or as he is discharged from the hospital. Children do not achieve independence in one leap but only as a gradual process under the wise guidance of parents and others to whom they are entrusted. So it is with patients. Unless we alert ourselves from the beginning to these psychological dangers inherent in medical treatment and take active steps to counteract them, our patients may achieve good physical results but have psychological sequelae. A rehabilitation viewpoint stressing patient-participation and interest would appear to carry the best promise of achieving this end.

It is also important to recognize that the setting of a vocational goal as early in the hospital regime as possible is one of the best motivations for rehabilitation. This objective should offer reasonable expectation of achievement not only from a physical but from a mental, social, and vocational viewpoint. All too frequently one finds goals set on the basis of one of these factors, but not on all. The person who says all persons with cerebral palsy should do one type of work is committing the same error as the one who says that all redheads have fiery tempers. All vocational plans must be formulated individually. There is no best job for any person, only a better job from a whole series of possibilities. One must insist on this individuality in the face of pressure from both physicians and vocational counselors for job lists for various disability groups.

The vocational placement of persons with chronic illness and disability is a reflection of our basic democratic beliefs. It accepts a man, not for what he is not, but for what he is. It stresses the fact that we are dealing with individuals who are not different basically from one another, but who possess various degrees of ability. It emphasizes the slogan of placement for the disabled —"Ability, Not Disability, Counts."

COUNCIL ON INDUSTRIAL HEALTH

REPORT OF THE COUNCIL

The following statement has been prepared jointly by the American Association of Industrial Nurses, the Industrial Medical Association, and the Council on Industrial Health of the American Medical Association to clarify legal and ethical principles of medical-nursing services in industry, both for members of interested professional organizations and for industrial employers providing any of the listed health services.

ESSENTIALS OF MEDICAL-NURSING SERVICES IN INDUSTRY

I. The value of physicians and nurses in industry depends upon:
  A. Training, experience and aptitude
  B. A position of authority in the industrial organization
  C. Good rapport with workers
  D. Good relations with their professional colleagues
  E. Thorough knowledge of work environment and processes
  F. Effective use of community health resources

II. A health service in industry should provide:
  A. A safe and healthful work place
  B. Health counseling and health education
  C. Personal medical services as required for:
    1. Observance of laws, codes and health regulations
    2. Emergency medical care
    3. Health conservation
    4. Job placement

III. Personal medical services involving the establishment of a diagnosis and the definition of treatment or the performance of specific preventive measures are the function of the physician; however, it is desirable for the nurse to participate in such services if she acts under direct medical supervision or under indirect supervision such as is provided by standing orders.

Standing orders are defined as a written compend of directions outlining services and procedures, approved and signed by a licensed physician and acknowledged by him to be services and procedures that may be performed by a certain nurse under certain circumstances. Such orders should not attempt to delegate the exercise of medical discretion but should serve as authorization for approved routine procedures for common minor conditions and as a directive for emergency care of more serious or complicated conditions until the physician's arrival.

IV. In the absence of direct medical supervision, the nurse should acquaint her employer with the legal and ethical scope of her services. She should at no time exceed the limits imposed on her by training and licensure. If the nurse is asked to perform services exceeding her legal and ethical limitations, she should seek advice from the nearest official medical and nursing agencies.

V. In respect to industrial health services other than those listed as personal, the nurse can exercise considerable initiative. Practical limits must be based on her training, experience, and the availability of qualified consultants.

COUNCIL ON MEDICAL SERVICE

MEDICAL SERVICES TO DEPENDENTS OF SERVICEMEN

At the time of the Midcentury White House Conference on Children and Youth (November, 1950) it became evident that considerable thought was being given to the necessity for developing a program similar to the Emergency Maternity and Infant Care (E. M. I. C.) Program of World War II. In addition, special programs for providing various medical services to dependents of servicemen are again under consideration by Congress. Two of the bills ask for practically the same program as operated by the Children's Bureau during World War II, with the exception that benefits would be extended to wives and children (up to 21 years) of all enlisted members of the armed forces. These bills are S. 1245, introduced by Senator Humphrey (Minn.), and its House counterpart, identical in phrasing, H. R. 4176, introduced by Congressman Mitchell (Washington State).

A third E. M. I. C. type of bill is H. R. 3349, introduced by Congressman Flood (Pa.), which would entitle the wife of any serviceman to a grant of $100 to help defray expenses incurred during childbirth, providing the expenses constitute a financial hardship. The bill would be administered by the military service, and payment would be made in the form of a cash award to the serviceman's wife.

The fourth bill of this type is S. 2337, introduced by Senator Lehman (N. Y.). The bill is similar to S. 1245 in that it provides for a maternity and infant care program under the Children's Bureau following the pattern set during World War II; however, it includes a second section that would establish a new program for all bed patient dependents of enlisted servicemen to be financed on a fifty-fifty federal-state matching basis. Hearings have been held on these bills before the health subcommittee of the Senate Committee on Labor and Public Welfare. Testimony of A. M. A. representatives appeared in the March 22, 1952, issue of THE JOURNAL (page 1037).

COMMITTEE CONSIDERATION

Early in 1951 the Council's Committee on Maternal and Child Care [1] began to occupy itself with the problems involved in the reactivation of an E. M. I. C. type of program. As a first step the Committee polled the state medical associations and about 400 physicians in 37 states (including general practitioners, obstetricians, and pediatricians) to learn their reactions to the E. M. I. C. operations. The survey or poll was not intended to be exhaustive but was merely to assist the Committee if and when it was called upon to participate in discussions on the subject; and in this the survey has been most helpful.

The individual physicians were almost equally divided as to the over-all performance rating of the E. M. I. C. program. A small majority (55%) indicated that the program was unsatisfactory, while the rest (45%) felt it was generally adequate for the purpose for which it was formed. On the other hand, in response to this same question, only 30% of the state medical associations believed the program was generally satisfactory, with 70% dissenting.

The patient-E. M. I. C. relationships were thought to be satisfactory by 70% of both physicians and state associations; however, quite a different reaction was received to the question on physician-E. M. I. C. relationships. Only 37% of the physicians and but 27% of the state associations reported that the relationship between the program and the physicians was satisfactory. The chief complaint of the profession, almost to a member, was that the program, developed prematurely in the Children's Bureau, gave little if any voice in the planning to the doctors of medicine who performed the medical service. Typical comments included "Too many inflexible rules"; "E. M. I. C. dictated to physicians"; and "Physicians were antagonized by the attempt to reconcile 'state plans' with edicts of the U. S.

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[1] Committee members: W. L. Crawford, M.D., Chairman, Rockford, Ill.; W. F. Mengert, M.D., Dallas, Texas; H. B. Mulholland, M.D., Charlottesville, Va.; S. R. Truman, M.D., Oakland, Calif.; G. D. Murphy, Jr., M.D., El Dorado, Ark., and D. A. Dukelow, M.D, Consultant, Chicago.

Children's Bureau." Other comments were made using such words as "paternalistic," "discriminatory," and "dictatorial," to describe the feeling of physicians in regard to the over-all administration of the program.

The second commonest complaint concerned the inequitable arrangement used for reimbursing physicians who performed the actual maternal and child care services. Almost three-quarters of the physicians replying thought that the average fee ($50) for care prior to, during, and after birth was inconsistent with other phases of the program and most certainly with regard to services rendered. Another objection regarding fees had to do with the ruling prohibiting added payments on the part of patients, even though the patient was both able and willing to augment the arbitrary E. M. I. C. figure. Many patients, however, did make added payments over and above those allowed by the Children's Bureau only to have these actions termed "abuses of the system." Particularly distasteful to patient and physician alike was the "all or none" ruling preventing the patient from obtaining hospital benefits when a nonparticipating physician was selected. Either the physician agreed to work under E. M. I. C. rulings, or the patient received no benefits—not even hospitalization.

A third and particularly irritating phase of E. M. I. C. was that which finds its way into nearly every system designed for the "grass roots" and administered from afar—the time-consuming, ever existent "red tape." Over 70% of the individual physicians thought the paperwork to be excessive, and 87% of the state medical associations, reflecting the opinions of their memberships, thought likewise. Comments along this line included "Paperwork took as much time as care of the patient"; "the blanks to be filled out were multiplied beyond reason"; and "E. M. I. C. forms were changed constantly and created confusion."

Despite the medical profession's dissatisfaction with the program's inflexibility, its inadequate fees, and excessive paperwork, the majority of both physicians and state associations reported that the wives and babies of servicemen received adequate care. It was obvious from the replies that even though most physicians did not like the program, they accepted participation as a patriotic duty and gave the best care possible. As one physician expressed it, "We gave our patients good care despite of and not because of this program." In fact, it was not uncommon for a physician to bypass the red tape and care for servicemen's wives without charge.

Both physicians and state medical associations had many suggestions to make in the light of their experiences under E. M. I. C. Generally speaking, these fall into three groupings. First, many of the evils of E. M. I. C. can be directly traced to the fact that the program like Topsy "wasn't born—just growed." The entire plan was built from appropriation bills, with little else to establish its legality. As a result, its entire life was fraught with uncertainty and lack of established principles beyond those enunciated from day to day by the Children's Bureau. Any new program for like aid should be based on substantive legislation. This means bills will have to be introduced, as some already have, and in the course of the trip to statute books they will encounter public hearings, testimony pro and con, and floor debate. Thus, through recognized procedures the need for such a program will have to be shown, and any program that is established will have the benefit of greater stability. Second, any new program that may be created will have to have a greater degree of elasticity in its regulations, with some system for handling complaints and eliminating bottlenecks at the local level. No more should the Children's Bureau be the oracle to which all must turn and bow for guidance in every procedure. Medical and hospital organizations should have a definite part in any program that may be devised, and the physicians would like to see existing voluntary agencies utilized to their fullest extent. The practicing physicians believe they should be consulted when changes are contemplated in accepted policy and procedure. For instance, in regard to reporting procedures, the physicians agree that forms should be kept to a minimum for all concerned, with a resultant decrease in administrative load. And third, most of the physicians recommended a more realistic scale for reimbursement. In other words, fees should be commensurate with services rendered and in keeping with local conditions. Comments regarding this phase were filled with suggestions making it obvious that much thought and planning would be required should another program such as E. M. I. C. be necessary.

Not content with learning the opinions of individual physicians and medical societies, during the spring and fall of 1951 the Committee held conferences and conversations with representatives of obstetric and gynecologic groups and such organizations as the American Academy of Pediatrics, American Legion, Association of State and Territorial Health Officers, American Committee on Maternal Welfare, Catholic Hospital Association, American Hospital Association, American Protestant Hospital Association, and the American National Red Cross. The Committee also met on several occasions with representatives of the Children's Bureau. While the representatives were not asked to speak officially for their respective organizations, they provided the Committee with considerable information as to the nature of the need for such a program at the present time. It was generally conceded, except by the Children's Bureau, that no widespread emergency existed that warranted setting up a special national maternal and infant care program for wives and dependents of servicemen similar to the E. M. I. C. program of World War II. It was also generally agreed that actual facts were not readily available and that a series of studies might well be undertaken to learn more concerning the medical problems confronting the dependents of servicemen. The Committee explored the possibility of such studies in a number of areas and decided to follow through on the idea with a completely impartial study of the situation in regard to obstetric and pediatric care in Los Angeles County, California.

Here the Research Department of the Welfare Council had already conducted one study and was interested in continuing with further studies in the field. Aside from the fact that a well-qualified and certainly unbiased research staff was available, it is estimated that Los Angeles County has approximately 125,000 dependents of servicemen. Arrangements were made for the A. M. A. to finance a major portion of the study and to publish the results. Actually, the study itself is divided into three parts. Part 1 has been completed, and an abstract of this part, together with a brief description of parts 2 and 3, follows this report.

MATERNITY AND INFANT CARE PROVISIONS FOR SERVICEMEN'S WIVES

Genevieve W. Carter, Ph.D.
Emanuel Reznick, M.A.
and
Gloria Roman, M.A., Los Angeles

The following account presents an abstract of part 1 of an extensive study under way in the Research Department of the Welfare Council of Metropolitan Los Angeles for the purpose of determining: (*a*) the magnitude and nature of the need for obstetric, pediatric,[1] and hospital care for wives of servicemen;[2] (*b*) the manner in which these needs are currently being met through local medical resources; and (*c*) the expressed reactions of the servicemen's wives in regard to present provisions for such care.

This article briefly discusses (1) the concept of need as it operates as a frame of reference for study findings; (2) the method employed in part 1 of the completed study and of the method used in part 2 now under way; (3) some characteristics of the geographic setting of the study population; (4) composite case abstracts representing typical cases; and (5) a review of some of the major findings of part 1.

From the Research Department, Welfare Council of Metropolitan Los Angeles.

[1] In this portion of the study pediatric care was limited to projected plans for medical care of the new infant born during the study period.

[2] Wives of servicemen were defined, for purposes of the study, as women who are married to enlisted men in the seven lowest pay grades of the armed forces, who utilized hospitals located in Los Angeles County for delivery during the study period, or who had Los Angeles County residence but utilized hospitals adjacent to Los Angeles County for delivery during the study period.

1. WHAT IS NEED?

A study that has as its purpose a description of the magnitude and nature of need accepts as one of its premises that findings about a particular need must be placed within some value frame of reference. If one defines need as receiving or not receiving medical care, the findings of this study will indicate, to the satisfaction of most readers, that the servicemen's wives as a group evidenced only minor magnitude of need, since in fact they did receive medical care. If need is defined as undue hardship in securing and paying for medical services, criteria for "undue hardship" must be defined and one who evaluates the 98 abstracts of interviews of the women in the sample must do so in terms of his own criteria. In choosing criteria for defining "undue hardship" one must take into account the remedial measures proposed, such as legislation for an E. M. I. C.-type program or health insurance benefits. (For instance, hardship due to delayed allotment checks would not be corrected by the above remedial measures. However, paying for private medical care at a sacrifice that leaves no money for necessary homemaker service for care of other children while the mother is in the hospital for delivery may result in "undue hardship.")

On the other hand, there would be no basis for study of need if there were general agreement that financial aid for maternity and infant care should be available to servicemen's wives as "a gift of gratitude," or as a service benefit for all men in military service. If financial aid for medical care is a gesture of patriotic gratitude, it should then be available to all pay grades.

Social research can identify and describe need, and statistical treatment can analyze and quantify need. However, recognition of need for the purposes of legislation, or the financing of broad programs to meet need depend on a number of social, political, and economic factors that are not inherent in the data of such studies.

Cultural values in our democratic society are constanly being changed and reformulated. Given a set of descriptive data about need in securing and financing medical care in 1952, a course of action leading to the expenditure of millions of dollars may be entirely acceptable, while the same degree of need in 1955, with an emphasis on economy, may result in a lack of recognition. In short, need is a relative concept that is interpreted within an individual (or group) value frame of reference. Recognition of a particular need depends on facts available, the type of proposed remedial services, weighing of other needs, the amount of money available to meet other needs, and the total social or political climate as to what is generally acceptable at that particular time.

The following facts have not been analyzed or formulated to conform with any particular point of view or philosophy of medical service program. The researchers have enjoyed complete freedom in developing the design for the study, for interview schedule construction, and for analysis of results. The study results are limited to a description of patterns of use of, and payment for, maternity and infant care services, the factors associated with specific choices, and the effect of these choices on a specific segment of the life situation of the wives of servicemen.

2. THE STUDY PLAN

The study plan was proposed in three units: part 1 consisted of interviews with enlisted men's wives who delivered in a sample period during January, 1952; part 2 of interviews with a stratified random sample of wives who delivered during August, 1951; and part 3 of interviews with wives in a war-impact area outside of California where medical facilities are known to be overtaxed. The last part of the study has not yet been authorized.

Part 1.—Los Angeles County was the geographic unit covered in a sample week during January, 1952. Eighty-nine public, private profit, and nonprofit hospitals were surveyed by trained interviewers. Because of the short hospitalization period, three contacts with each hospital were necessary. Simultaneously, all military facilities located outside of but in the vicinity of Los Angeles County where enlisted men's wives with Los Angeles County residence received prenatal or hospital care for delivery were surveyed. The birth records were searched to check the cases reported by the hospitals, and vital statistics were reviewed to check on any monthly variation in birth rates. These precautions plus the fact that approximately 98% of births in Los Angeles occur in hospitals insured the universality of the sample of women interviewed.

The interview schedule was developed and tested during a pilot study period. Experienced interviewers were trained and assigned geographic areas for coverage. The interviews lasted from 20 to 40 minutes. The servicemen's wives were unusually cooperative and offered case material freely.

Part 2.—On the basis of the experience gained in the conduct of part 1 of the study, the interview schedule was readjusted to simplify coding of the information obtained. The data for part 2 were secured from a 25% stratified random sample of servicemen's wives who delivered during the month of August, 1951. Interviews were conducted in a manner similar to those in part 1. This sample population, however, had had sufficient experience subsequent to hospital discharge to enable them to provide accurate information regarding posthospitalization services, pediatric care for the infant, and a description of the manner in which they were meeting the bills and expenses incurred prior to and during hospitalization. In order to ascertain the universe of enlisted men's wives who delivered in August, 1951, so that the sample could be secured, birth records were used in preference to hospital records, since there was less possibility for omission. A sampling method that allowed for substitution of like cases was employed for two reasons. There was the possibility that birth records would show the husband to be a serviceman, whereas actually he was a civilian employee of the armed forces. Also, the birth records listed the place of residence as of August, 1951, and it was felt that provision should be made to substitute for women who had moved during the subsequent seven-month period and could not be located. When cases of these types occurred in the sample, substitution of like cases was made. At the present time the data have been collected, are being coded, and will be processed in the same manner as was done in part 1 of the study.

3. LOS ANGELES COUNTY AS THE STUDY SETTING

Since Los Angeles County is the geographic setting of the study, several characteristics that are more or less unique to this territory are briefly reviewed.

General Factors.—At the time of part 1 of the study in January, 1952, there were approximately 4,350,000 people living within the 4,083 square miles of Los Angeles County, which is composed of 45 incorporated cities, rural districts, and suburban areas. The political subdivisions result in complex political structure and administration of health services. This kind of population distribution results in a decentralized type of economic and social structure. During the last 10 years the population has increased 50%, with new persons coming in at the rate of approximately 10,000 a month, and services have not kept pace with the growth in population. Lack of public transportation creates hardships in securing the medical and social services that are available.

Medical Service.—Los Angeles County is noted for its advanced public health program. In 1950 there were 24 county-supported maternity clinics, 7 Los-Angeles-City-supported maternity clinics, and 40 child health conferences. The Los Angeles County Department of Charities, Bureau of Hospitals, maintains a public hospital system. However, Los Angeles is considered as having the highest per diem hospital costs in the country. It is also known to have an unusually high proportion of small "profit" hospitals. The county is well supplied with physicians, and it is estimated that in 1952 there were 7,000 physicians licensed to practice in the county. It is estimated that between 5 and 7% of the total number of county medical association members are obstetricians (the total county membership is 4,600). Military facilities within Los Angeles County consist of a Navy infirmary at Terminal Island and an Army infirmary at Fort MacArthur for outpatient services to dependents. Since the study was completed, inpatient services have been opened at Fort MacArthur. Adjacent to Los Angeles County both hospital and outpatient facilities are available at Port Hueneme, Oceanside, Muroc, and a new facility at Corona.

War Impact.—Los Angeles County is known as a war-impact area, and with its aircraft and other factories is one of the largest supply centers for the armed services. Fort MacArthur is the Army assembly center; Long Beach and San Pedro Harbor are important naval centers. Several thousand servicemen come weekly to Los Angeles, Long Beach, and Hollywood from as far as San Diego, Port Hueneme, Camp Pendleton, Camp Roberts, Camp Haan, Fort Ord, the Muroc airbase, Inyokern, and March Field. Due to lack of accommodations elsewhere, many servicemen's families live in Los Angeles County.

4. TYPICAL CASE ABSTRACTS

As an introduction to the rather complex data produced by this study, it might be well to present a composite picture of a "typical" serviceman's wife interviewed during the course of the investigation. In fact there are two "typical" women, Mrs. A. who had private care and Mrs. B. who had clinic care. (The cases distribute themselves bimodally in terms of patterns of resource used, but hardships when present were individual in nature.)

CASE 1.—Mrs. A. is 22 years old, Caucasian, and has lived in Los Angeles County for two years. She is living with her parents; she "has to." Her husband is a private first class and is now stationed in the United States, but not in the Los Angeles area. This was Mrs. A.'s first pregnancy. She received an allotment of $85 during her pregnancy, which her husband is supplementing to some extent out of his own wages. Parental help, in the form of free room and board, is an additional supplementation. Mrs. A received her first prenatal care by the time she was in her third month of pregnancy. She chose a private physician because her mother knew the doctor and because Mrs. A. did not like seeing a different doctor at each visit to a clinic. She wanted individual attention for her first baby. Having chosen a private physician for prenatal care, she chose the hospital of which he is a staff member for delivery. She felt that the military hospital at Oceanside, about 90 miles away, was too far to go to for delivery and that she "just couldn't" go to a county hospital.

Mrs. A. was billed between $100 and $150 for her physician's services and expects to be billed $76 to $125 for her hospital care. She paid her doctor in installments and had made total payment by the time of hospitalization. She paid her hospital bill in a lump sum in the form of a deposit. The money for payment came from her allotment and the extra money her husband sent her. Mrs. A.'s plans for care of her baby are somewhat indefinite at this time. She thinks she will use the services of a private physician. She hopes to move out of her parents' household as soon as she can manage.

CASE 2.—Mrs. B. has very much the same background as Mrs. A., but she chose to use the services of a clinic for prenatal care rather than a private physician. She chose a military clinic because she could not afford private care. The clinic was always crowded, and she "hated to wait two or three hours each visit." Having chosen a military clinic for prenatal care, she chose the military hospital at Oceanside for delivery because it was "free" and because she felt that "Navy wives ought to use Navy facilities," since it is a service benefit. Since the Navy hospital is 90 miles away, Mrs. B. was afraid she would "have the baby on the way." Mrs. B.'s prenatal care cost her nothing, and her hospital care cost her $1.75 per day. She plans to pay this on discharge from the hospital out of her allotment. Mrs. B.'s plans for pediatric care are also indefinite, but she thinks she will use a military clinic or more likely a public health department "well-baby" clinic, since she doesn't believe she can afford private care.

5. FINDINGS

A. *Background of Women Interviewed.*—An analysis of the background characteristics of the women in the sample indicates that by and large they were young; 31% were less than 20 years of age, and 77.6% less than 25. Contrary to expectations, they were not a highly mobile group; 67% had lived in Los Angeles County area for more than two years, and only 14.4% had lived in this area for less than six months. Over half of the women share living quarters with family or friends. In three-fourths of the independent households the serviceman was not living in the home. This was the first delivery for 69% of the women.

The husbands of 59% of the women interviewed had been in the armed forces for two years or less; 15.5% of the women had husbands who are probably career servicemen since they had been in the armed forces for more than six years. Most of the women received allotments of either $85 per month or $127.50 per month during their pregnancy. The allotment is a reflection of the rank of the husband and the number of dependents. The total incomes of 78.5% of the households amounted to $150 per month or less; 30.6% had total incomes of $85 per month. This income included the allotment and any additional money the serviceman authorized the government to withhold from his pay to send to his wife. In cases where the serviceman was living at home, his total pay was considered in the computation of monthly income.

B. *Seven Pay Grades Included in Sample.*—The serviceman's rank was related to the pattern of resources used. The natural break in patterns of resources used came between pay grades six and seven. All wives of servicemen in pay grade seven (a chief petty officer in the Navy, master sergeant in the Army, Air Force, and Marines) used private facilities exclusively for complete maternity care and therefore formed a distinct group. Wives of servicemen in the first two pay grades were distributed fairly evenly in their choice of resources for prenatal care. At the third and fourth pay grades the servicemen's wives tended to prefer prenatal care from a private physician over all other resources, although 40% were served by some kind of public facilities. At the fifth and sixth pay grades 53% of the wives received prenatal care from military clinics. At this level 37% used private physicians.

A shift in the use of free facilities occurred at the fourth pay grade. The wives of the men in the lowest three pay grades tended to use public health department clinics for prenatal care when they chose free care; those in pay grades four, five and six, who chose free care, preferred military facilities. This preference is also exhibited in the choice of hospital services. Private hospital facilities were used oftenest at each pay grade level, but the wives of men in the fourth, fifth, and sixth pay grades favored military hospitals as a second choice, while the wives of men in the first, second, and third pay grades favored county hospitals.

The sources of money for meeting normal living expenses were significantly different as rank increased. Family help, i. e., financial help given to the serviceman's wife by either her parents or the serviceman's parents, was found to be a source of income for over 66% of the women whose husbands were in pay grades one, two, and three and for 75% of those in pay grade four, but for only 35% of the women whose husbands were in pay grades five and six and for 20% of those in pay grade seven.

C. *Resources Used.*—Prenatal Care: The great majority of the women in the sample received care during or prior to their third month of pregnancy (71.6%). Prenatal care from a private physician, either an obstetrician or a general practitioner, was received by 42.2% of the women. Another 42.4% received prenatal care from a clinic, either military, local public health department, or private hospital. The remaining 15.4% used a combination of the above.

Economic consideration was given as at least one of the reasons for the choice of military or public health department clinics by 66% of the women who used these resources. Inconvenience of location of alternative resources was cited as a reason by only 37% of the women using the services of a private physician, by over 80% using private hospital clinics, and by 64% using local public health department clinics. Over 50% of those choosing a private physician for care cited previous satisfactory experience as a reason. Slightly less than 50% of those who chose clinics operated by private hospitals gave the same reason. It is significant that none of the women using military, private hospitals, and public health department clinics gave "anticipated unsatisfactory experience" as the reason for not using the services of a private physician.

The women who utilized the services of a private physician or the services offered by private hospital clinics received prenatal care earlier in pregnancy than women utilizing military facilities or by local public health departments. Eighty-two per cent of the women utilizing the services of a private physician and 80% of the women using private hospital clinics first received prenatal care during or prior to the third month of pregnancy, as compared to 61% of the women using military facilities and 55% of the women using public health department clinics.

Hospital and Delivery: All of the women in the sample delivered in hospitals.[3] Military facilities operated by the Navy were utilized by 24.5% of the women; 15.3% used county facilities; and 60.2% private hospital facilities. The reasons given for the selection of a particular type of hospital depended on the type chosen. Women who chose to deliver in county or military hospitals stressed economy; women using county or private hospitals stressed "inconvenience of location of alternative facilities" and "previous satisfactory experience" as reasons for their choice.

There was a high degree of consistency in resources used for prenatal and hospital services. That is, 89.4% of the women receiving prenatal care at military infirmaries also delivered in military hospitals; 90.2% of the women receiving prenatal care from private physicians or from private hospital clinics also delivered in private hospitals. The resources used for prenatal care by women delivering in county hospitals did not form as definite a pattern. Of these women, 61.5% received prenatal care at clinics operated by public health departments, 23.1% received prenatal care at military infirmaries, and 15.4% received prenatal care from private physicians or from private hospital clinics.

The consistency between resources used for prenatal care and hospital services held for pediatric care as well. Of the women who had the services of an obstetrician for maternity care, 61% also planned to use a specialist for the pediatric care of their infants; 55.5% of the women using the services of a general practitioner for maternity care also planned to use the services of a general practitioner for the medical care of their children; and 52.3% of the women utilizing infirmaries for themselves planned to use military infirmaries for obtaining medical care for their children. An even larger number, 77.8%, used public health department clinics for prenatal care and planned to use public health department clinics for pediatric care.

D. *Payment of Care.*—All or part of their maternity care was paid for by 77.1% of the women.[4] Twenty-four per cent paid between $101 and $150, and 18.7% paid between $251 and $300. The payments of the remainder of the women were fairly evenly distributed over the entire range, $50 to $350.

A high proportion of the women, 42.4%, received free prenatal and/or delivery services. The substantial difference between the number of women receiving total maternity care at token cost, 22.9%, and those receiving only prenatal and/or delivery service is primarily due to the county hospital's policy of billing for hospital services. A second factor was that military outpatient facilities were available within the Los Angeles County area, but the closest military inpatient facility, Port Hueneme, was 50 miles from the center of the city. The private hospitals, too, in some cases offered free prenatal care but required payment for inpatient services.

In addition to the 42.4% who received free prenatal and/or delivery care, 14.7% paid between $51 and $100,[5] 28.1% between $101 and $150, and 14.8% between $151 and $200. As might be expected, the average cost for specialized obstetrical care was greater than the average cost for nonspecialized obstetrical care. Whereas 44.5% of the women utilizing the services of a general practitioner paid $100 or less for their prenatal and delivery care, 15% of the women using the services of an obstetrician paid this amount. At the other end of the scale, whereas 5.6% of the women using the services of a general practitioner paid $150 or more, 45% using the services of an obstetrician paid this amount or more for their prenatal and delivery care.

In contrast with prenatal and/or delivery care, only 19.8% of the women received free or token payment inpatient services. This group consisted entirely of women delivering in military hospitals. The cost for inpatient services for 7.4% of the cases was between $51 and $75; for 22.2% between $76 and $100; for 18.5% between $101 and $125; for 19.8% between $126 and $150; for 7.4% between $151 and $175; and for 4.9% $176 or more.

E. *Subsidization of Care.*—Forty-nine per cent of the women in the sample received all or part of their care at less than cost. At the time of the study, free prenatal care was available through the military infirmaries, the public health department clinics, and the private hospital clinics. Free delivery service was available at military hospitals and in the county hospitals, although patients in county hospitals were billed for hospital services.

Forty-eight of the 98 women received less-than-cost care from some medical agency during the course of their pregnancy and delivery. Twenty-one of these women were subsidized at each of the three levels of maternity care: prenatal care, delivery care, and hospital services. Three received less-than-cost prenatal care only; 15 received free prenatal care and delivery services alone; 1 received free delivery service alone; and 8 received free delivery services and hospital services alone. Ten per cent of the women received insurance benefits that covered part of the cost of maternity care. All of these women delivered in private hospitals and most received prenatal care from private physicians.

STUDY CONTINUATION

This article has presented preliminary findings from an extensive study still under way. Final conclusions at this time would be premature, but there are already sufficient descriptive data to use as a basis for planning and formulating principles regarding medical care for servicemen's wives. This kind of study, conducted by a neutral research organization which has no predetermined conclusions, represents a significant step toward an objective analysis of need for medical care.

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[3] One woman, gravida 4, delivered en route to a centrally located private hospital.

[4] Maternity care included prenatal care, delivery care, and hospital services.

[5] Eight patients had arrangements to have a single payment cover all of the maternity costs. Two were in the $51 to $100 category, three in the $101 to $150 category, and three in the $151 to $200 category.

MEDICAL MOTION PICTURES

The Unsuspected: 16 mm., black and white, sound, showing time 17 minutes. Supervised by Film Counselors, Inc. Produced in 1952 by Trident Films, Inc., for the National Tuberculosis Association, Inc. Procurable on loan or purchase from state and local tuberculosis associations.

This is a dramatic film that shows how community health agencies can cooperate with physicians, patients, and patients' families to help solve the many problems faced by tuberculosis patients and their families. Services of community agencies are personified in the character of a public health nurse, whose visit to a farm family leads to the discovery of an unsuspected case of tuberculosis in an expectant mother. The public health nurse tactfully enlists the aid of various community health and welfare agencies, which help to make possible the hospitalization of the sick mother and the care of the home and family while she is getting well. The work of the physician, hospital staff, public health departments, and other agencies is shown.

This is one of the few films regarding tuberculosis in which definite emphasis is put on the fact that a diagnosis is based on more than a chest roentgenogram. The ways in which the public health nurse, the physician, and the several community agencies all work together to help the patient and her family help themselves are brought out very well. The direction, photography, and narration are well done. This film is recommended for all lay audiences of junior high school age and older. It would be useful for instructional purposes in science and health education classes and as preparation for community x-ray programs. It will also be of interest to public health nurses.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Zoning Laws: Right of Physician to Maintain Office in Home.—The plaintiffs filed suit to enjoin the defendant physician from using his residence as a medical business house in violation of municipal zoning regulations. A trial court finding in favor of the plaintiffs was reversed by the court of appeals; the plaintiffs appealed to the Supreme Court of Tennessee.

The plaintiffs were 15 home owners in a residential subdivision in Memphis and the corporation connected therewith known as Red Acres Improvement Club. The defendant, Dr. Burkhalter, and his wife were the owners of a handsome residence in that subdivision. Dr. Burkhalter was a pediatrician, and he maintained an uptown office where he received patients from 8 a. m. to 4 p. m. He also received patients in an office at his dwelling from 4 p. m. to 8 p. m., and an average of between 15 and 25 patients per day went during those hours to his residence office and were given professional attention. The part of the residence occupied by Dr. Burkhalter and his wife and three children as their home consisted of seven rooms and two baths downstairs and two bedrooms upstairs. That part of his residence in which he maintained his professional office consisted of a reception room and two small rooms in which he saw patients. In these rooms were such paraphernalia as would be expected in a physician's office. There was also a lavatory, a wash basin, a built-in cabinet, and a refrigerator in which he kept those medicines pertinent to the treatment of the physical ills in which he specialized. Thus, the building was primarily and mainly a residence, with the physician's office incidental. No other physician was associated with the defendant in his residence office, but there was one woman secretary and stenographer whose hours were from 8 a. m. to 4 p. m. The physician's records were kept there, and she had supervision of them. The usual telephone was also there. In addition, a receptionist was on duty from 4 p. m. to 9 p. m., and, for two or three months in 1949, there was another young woman who assisted in this office. The physician's name plate was on the outside of the office. Adjacent to the residence, and a part of the premises, was a concrete space sufficient for the parking of 15 or 25 cars used by patients and others for the parking of their automobiles while in the office or residence.

The pertinent section of the Memphis Zoning Ordinance relating to uses to which class A residence property may be put provided, among other things: "8. Uses customarily incident to any of the above uses when located on the same lot and not involving the conduct of a business; including also home occupations engaged in by the occupants of a dwelling not involving the conduct of a business on the premises, and including also the office of a physician, surgeon, dentist, musician or artist, when situated in the same dwelling used by such physician, surgeon, dentist, musician or artist as his or her private dwelling; provided no name plate exceeding one (1) square foot in area, containing the name and occupation of the occupant of the premises, nor a sign exceeding eight (8) square feet in area appertaining to the lease, hire or sale of a building or premise, nor advertising sign of any other character shall be permitted in any 'A' Residence District." The ordinance also provided that medical clinics could be maintained in class B resident districts, however, and the plaintiffs contended that the defendant operated a medical clinic.

It will be noted under item 8 of the above quoted ordinance provision, said the Supreme Court, that a "physician, surgeon, dentist, musician or artist" may have "an office" in his residence in any A residence district. Implicit in such a provision is the authority to use that office in the manner in which a physician, surgeon, dentist, musician, or artist would be expected to use such an office. Everyone knows that a physician uses his office as a place to which patients are privileged to come for examination and treatment. It necessarily follows that it was intended by this ordinance that patients who desired the services of Dr. Burkhalter could go to his office at his residence and there be examined and treated. In fact, the ordinance expressly authorized Dr. Burkhalter to inform the public that he is maintaining an office there for that purpose in that it authorized him to display there at some conspicuous place his name plate informing the public what his "occupation" there was. There is nothing in the ordinance justifying an inference that it was intended to limit the number of patients who might see the physician there on a given day, and it is therefore immaterial whether the physician had 1 call or 25 calls a day in the office. If the physician may use his office, the Supreme Court continued, it follows that he may do those things that make its use available in a reasonable manner. Otherwise, the ordinance, in this respect, would not make sense. Indeed, a provision to that effect would have destroyed the privilege given in that it would permit him to have an office but deny him, for all practical purposes, the privilege of using it.

For these reasons, said the Supreme Court, it is our opinion that the office that this record shows Dr. Burkhalter to be maintaining at his dwelling does not violate the Zoning Ordinance unless, in any event, the office is shown by the record to be a medical clinic. A number of lay witnesses called Dr. Burkhalter's office a medical clinic. The only expert testimony on the subject was that of the physician, and he said that it was not a clinic. In as much as we are referring to a medical clinic, the Supreme Court continued, it would seem that the most logical place to go for a definition thereof is a medical dictionary. The "American Illustrated Medical Dictionary" by Dorland defines a clinic as "an establishment where patients are admitted for special study and treatment by a group of physicians practicing medicine together." It is apparent, concluded the court, that Dr. Burkhalter's office does not come within that definition. The burden was on the plaintiffs to establish it as a fact that this office was a medical clinic, but the plaintiffs failed to carry this burden. In fact, every definition of a medical clinic that was made available to the court forces the conclusion that defendant's office was not a medical clinic.

Accordingly, the judgment of the court of appeals in favor of the defendant physician was affirmed. *Red Acres Improvement Club v. Burkhalter, 241 S. W. (2d) 921 (Tenn., 1951).*

Governmental Hospitals: Privileged Communications and Right to Inspect Patient's Records.—This was a decision involving two cases that were argued together. Both cases were heard by the court of claims and the appellate division and, from the judgments rendered, appealed to the Court of Appeals of New York.

In each case the question certified to the Court of Appeals was concerned with the propriety of a ruling of the court of claims permitting an examination of the hospital records of patients at Kings Park State Hospital.

In Matter of Warrington, the petitioner was the representative of an incompetent person who, while confined as a patient at Kings Park State Hospital, fell to the ground from a fourth floor doorway in one of the hospital buildings, thereby sustaining injuries alleged to be permanent. To ascertain the circumstances surrounding the incompetent's injury and to determine whether the state or any of its employees were guilty of actionable negligence, the representative applied to the court of claims for an order permitting him to inspect the hospital records relating to the patient's case. The facts sought concerned the incompetent's physical and mental condition during her stay at the hospital, the care, supervision, and surveillance afforded her, and the facts surrounding the occurrence of the accident tha caused her injuries. The court of claims granted the application which action was unanimously affirmed by the appellate division Section 20 of the Mental Hygiene Law provides "The department of mental hygiene shall keep in its office and accessibl only to the commissioner, medical director and such othe officers and subordinates of the department as the commissione may designate, except by the consent of the commissioner an order of a judge of a court of record, a record of each patie admitted to an institution within the department . . . and al the records, papers and reports of examinations of others ma by any division or bureau of the department." Section 34, subparagraph 9 of the Mental Hygiene Law, in referring to the powers and duties of the director of each state institution and the records that he keeps provides: "Such record shall be accessible only to the director and such officers and subordinates of the institution as he may designate and to the commissioner and his representatives, except on the consent of the commissioner or an order of a judge of a court of record." We agree with the ruling of the appellate division, said the Court of Appeals, that in the circumstances disclosed by the record before us, the opposition of the state to efforts by the representative to inspect hospital records relating to the incompetent on the ground that the medical history of the incompetent constitutes a communication that is privileged from disclosure to the incompetent's own representative, is without merit. At common law no privilege was attached to physician-patient communications. The privilege was first introduced by statute in New York in 1828, to the end that a patient might disclose details of his ailment to the physician without fear that the physician might be compelled to divulge his knowledge on some future occasion. It is clear, said the Court of Appeals, that the privilege is that of the patient and that, at least to a degree, the state objects to the present application not in the interests of the patient but to protect itself. It has been held that at a trial any party to the action may object to evidence that comes within the prohibition of the statute, and it remains for the patient to waive the privilege. That principle, however, does not authorize a physician or any agency acting in his behalf, as is the state in the present case, to decline to inform the patient in private conference of steps taken to effect the cure that the physician has undertaken. We are able to conceive of no reason why the representative of an incompetent patient, acting to further the interests of his ward, should be treated in a manner different from the patient himself. The transaction involved here is a private one between a state hospital and the representative of one of its patients. To prevent such representative from securing information to enable him to properly carry out his function to preserve the rights and interests of the incompetent would, in our view, be a result unwarranted by law. Moreover, the Court of Appeals concluded, section 20 and section 34, subdivision 9, of the Mental Hygiene Law, clearly indicate that hospital records pertaining to an incompetent shall be accessible on "an order of a judge of a court of record." The order of a judge of the court of claims comes within that statutory provision and the state does not assert that there has been abuse of the discretion vested in the court of claims as a court of record.

In Mulligan v. State of New York, the petitioner was a public administrator engaged in the administration of the estate of George H. Pierre, deceased, alleged to have died as a result of a fall while a patient at Kings Park State Hospital. The public administrator filed a claim against the state, alleging that the fall that caused the deceased's death was due to the negligence of the state in failing to properly supervise the patient. When the public administrator applied to the court of claims for an order permitting him to inspect the hospital records of the deceased to enable him to properly prepare and present proof in support of a claim against the state, a judge of the court of claims granted the administrator's application. The appellate division, however, reversed. The state contended that the hospital records that the claimant sought to examine were privileged and that the privilege could only be waived by the personal representative of the decedent on the trial of any claim. In support of that position the attorney-general argued that the provisions of the Mental Hygiene Law quoted above, each of which make the record of an inmate of a state hospital accessible on "an order of a judge of a court of record" must be read with sections 352 and 354 of the Civil Practice Act relating to confidential communications. We cannot agree with that argument, said the Court of Appeals. If we affirm the appellate division order reversing the action of the court of claims we thereby disregard two statutes that had their origin at least 55 years ago and that the legislature has since seen fit to carry into the Mental Hygiene Law making state hospital records accessible on "an order of a judge of a court of record." If the legislature had since been disposed to require in some circumstances that section 20 and section 34, subdivision 9, of the Mental Hygiene Law be read with sections 352 and 354 of the Civil Practice Act, it would have been a simple matter to have enacted legislation to accomplish this end. Having failed to point out any such legislation, we think that the order of the appellate division in the Mulligan case was an error. Legislative history makes it clear that since 1896 the legislature has been willing to leave to the discretion of "a judge of a court of record" the inquiry whether the end to be achieved in a given case justifies the means afforded by the provisions of the Mental Hygiene Law.

Accordingly, the Court of Appeals held that the court of claims acted properly in each case in permitting an examination of the hospital records. *In re Warrington and Mulligan v. State, 100 N.E. (2d) 170 (New York, 1951).*

Malpractice: Failure to Take Roentgenogram to Locate Hypodermic Needle in Arm.—The plaintiff sued for damages for injuries alleged to have been caused by the failure of the defendant physician to take a roentgenogram to locate a broken hypodermic needle in her arm. From a judgment in favor of the plaintiff, the defendant appealed to the Supreme Court of Tennessee.

The plaintiff consulted the defendant physician because of a knot in her left arm at the site of a number of injections that she had had over a considerable period of time. She told the physician that she thought a needle had broken off in her arm but that she did not want him to operate unless he was sure it was there. She requested that he ascertain the existence of the needle by the use of the x-ray machine that he had in his office. In response to her directions not to operate unless he was sure of the needle's existence, the defendant replied that "regardless of what it was, it should be seen about." He thereupon administered a local anesthetic and cut into the knot. The physician did not find the needle, but he did remove some tissue that had been hardened by many injections. About 10 weeks later, the plaintiff again visited the defendant; he took a roentgenogram that disclosed a part of a broken hypodermic needle slightly above and lateral to the place where the patient had been operated on. He then sent the plaintiff to a hospital, put her under an anesthetic, and removed the needle by means of an operation that left a scar 3 to 4 in. (7.62 to 10.16 cm.) in length. The question, said the Supreme Court, is whether, under the recognized standard of practice in the defendant's community, the defendant was negligent in failing to take roentgenograms of the plaintiff's arm before performing the minor operation.

Three physicians who practiced in the same vicinity as the defendant were called as witnesses. Each testified that, if a patient's complaint is localized to the outer surface in a given area, the practice of probing that area to locate a foreign object is a proper method of determining the existence of a foreign substance. There was no evidence that this method was considered improper. Two of the physicians stated that an x-ray examination would be the best way to determine the existence of the foreign substance, but they agreed that the method followed by the defendant "is a proper way." It is seen from this, said the Supreme Court, that the course followed by the defendant was a proper course and one advocated by many of the physicians in good standing in that vicinity. When competent medical authority is divided, the court continued, a physician will not be held responsible if, in the exercise of his judgment, he follows a course of treatment advocated by a considerable number of his professional brethren in good standing in his community, and a physician is required to exercise only such reasonable skill and diligence as is ordinarily exercised in his profession. Furthermore, the testimony of other physicians that they would have followed a course of treatment different than that followed by the defendant is not sufficient to establish malpractice, unless it also appears that the course of treatment followed by the defendant deviated from one of the methods of treatment approved by the standard in that community. In our opinion, the Supreme Court concluded, there was no substantial evidence in this record to support the finding of the trial court that the defendant was guilty of malpractice in failing to take a roentgenogram of the plaintiff's arm at the time of the minor operation. Accordingly, the judgment of the trial court and of the court of appeals in favor of the plaintiff was reversed.—*Gresham v. Ford, 241 S.W. (2d) 408 (Tennessee 1951).*

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Am. Journal Diseases Child., Chicago

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Criteria for Sanatorium Care of Children with Tuberculosis. M. R. Lichtenstein and O. L. Bettag.—p. 292.
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Method for Objective Measure of Developmental Progress. L. H. Blum and N. D. Fieldsteel.—p. 306.
Egg Allergy in Children: Incidence and Evaluation in Relation to Chick-Embryo-Propagated Vaccines. B. Ratner and S. Untracht.—p. 309.
*Congenital Heart Disease Following Maternal Rubella During Pregnancy. S. Gibson and K. C. Lewis.—p. 317.
Q-Tc Interval in Diagnosis of Rheumatic Fever. J. A. Joos, P. N. G. Yu and C. P. Katsampes.—p. 320.
Tick Paralysis on the Atlantic Seaboard: Study of Incidence During Poliomyelitis Season with Report of Case and Review of Published Cases. J. A. Costa.—p. 336.

Intrapulmonary Shadows in Primary Pulmonary Tuberculosis.—Lobar and segmental shadows are found frequently in the roentgenograms of children with primary tuberculosis. Of 102 patients from 6 months to 12 years old admitted to the pediatric department of the Utrecht University hospital, 35 showed these shadows. The author found that they indicated a tuberculous lesion of the bronchial wall associated with a secondary inflammation. Sometimes they were caused by perforation of lymph nodes into the bronchi. In follow-up investigations these shadows sometimes indicated various residual lesions that often remained symptomless. Of 51 patients who were seen 16 years after a lobar or segmental shadow had been discovered, 31 had lesions in the upper lobe, middle lobe, and lingula. Stenosis of the bronchus, a lobe, or a segment was found in 12 patients, rigidity or dilatation of the bronchus, middle lobe, or lingula in 15, deformation of the bronchi in 5, pronounced shrinking of a lobe in 5, marked hypertrophy of the bronchi in 5, and thickening of the pleura (interlobar) in 7. Fifty patients had remained symptomless since their discharge, whereas only the patient with bronchiectasis of the lower lobe had mild fever and rales. A detailed description of these lesions is given. The residual shadows in the right middle lobe and left upper lobe are probably often due to pleural thickening.

Heart Disease in Children after Maternal Rubella in Pregnancy.—Of more than 1,000 children with congenital heart disease, 17 were born to mothers who had had German measles during pregnancy. Diagnosis of patent ductus arteriosus was considered in 14 of these children and was confirmed in 10 during the operation. An additional cardiac malformation was found in four of the patients who were operated on, which indicates that complications are much more frequent in this group of children. In one patient diagnosis was made of defect of the auricular septum with a possible association of mitral stenosis. In the only cyanotic child physical signs, roentgenograms, electrocardiograms, and fluoroscopic findings were typical of tetralogy of Fallot. In one child defect of the ventricular septum was considered, but the lesion was probably not associated with the illness of the mother since she had German measles during the fifth month of pregnancy. Accompanying lesions were not found in eight children, whereas cataracts of both or one eye were present in seven and deafness in two. The high incidence of patent ductus arteriosus in children born to mothers who had rubella during pregnancy is stressed.

A.M.A. Arch. Ophthalmology, Chicago

47:121-272 (Feb.) 1952

Distortion of Image by Ophthalmic Prisms. K. N. Ogle.—p. 121.
Cataract Extraction After Glaucoma Surgery: Lateroinferior Approach Following Filtering Glaucoma Operation. A. Callahan.—p. 132.
Developmental Anatomy of Nasolacrimal Duct. J. V. Cassady.—p. 141.
Atypical Coloboma of Choroid with Dysplasia of Macula: Report of Case. S. L. Saltzman and H. T. Gaynin.—p. 159.
Transient Monocular Blindness Associated with Hemiplegia. M. Fisher.—p. 167.
*Effects of Ultrasonic Waves on Refractive Media of Eye. O. Lavine, K. H. Langenstrass, C. M. Bowyer and others.—p. 204.
Surgical Treatment of Esotropia with Bilateral Elevation in Adduction. M. J. Urist.—p. 220.
Cornea and Sclera: Review of Literature. M. L. Berliner.—p. 250.

Effects of Ultrasonic Waves on Eyes.—The term ultrasonics designates sound waves having a frequency beyond the audible range, that is, above 30,000 cps. This paper describes experimental research on the production and possible clearing of opacities in the refractive media of the eye by means of ultrasonic irradiation. If ultrasonic energy is applied to the lens of the intact eye, there is fairly uniformly distributed concussion of all structures in the path of this beam; fairly uniform irradiation of the cornea, the lens, and the vitreous body, as well as of the retina, choroid, and sclera, occurs. When, however, the parallel ultrasonic beam falls first upon a concave reflector and is thus focused in the substance of the crystalline lens, there is an almost completely selective effect on the lens fibers. Focusing, however, rapidly becomes less effective when the wave length approaches the dimensions of the reflector. This happens as the frequency falls below 1 megacycle. For these reasons, most of the experiments were made with sharply focused beams having a frequency greater than 1 megacycle. Ultrasonic experiments on the eye were undertaken with the hope that ultrasonic waves, when properly used, would provide a means for the disruption and ultimate liquefaction of the opaque lens-protein and lens-fiber systems of clinical cataracts. This hypothesis was based on (*a*) many reports that large molecules can be broken into smaller ones by means of ultrasonic waves; (*b*) the dispersal and coagulation of aerosols by means of ultrasonic waves; and (*c*) cases of the spontaneous disappearance of the opaqueness in the traumatic cataract of youth and in cataracta hypermatura fluida. The authors succeeded in producing new types of ultrasonic cataracts, which in some respects are similar to certain clinical cataracts. The perinuclear opacities observed by Zeiss and Kawamoto have been reproduced. These are due to cavitation and are produced by irradiation with low frequency, high intensity ultrasonic beams. This type of opacification is reversible. The formation of the Lavine cataract is due to the absorption of high frequency, high intensity ultrasonic radiation, which results in high local temperatures. This type of opacity is irreversible. The liquefaction of the vitreous produced by ultrasonic irradiation is irreversible.

American J. Digestive Diseases, Fort Wayne, Ind.

19:33-60 (Feb.) 1952

*Coronary Arteriosclerosis in Diabetics. R. W. Thaler and C. G. Wornas.—p. 33.
Obesity, Its Associated Diseases and Treatment. J. H. Barach.—p. 37.
Evaluation of Blood Studies in Diagnosis of Diseases of Liver. L. H. Sophian and V. J. Connolly.—p. 44.
Adenomas of Rectum and Sigmoid in Alcoholics: Sigmoidoscopic Study. M. Diamond.—p. 47.
Carcinoma of Esophagus. A. J. Delario.—p. 50.
Survival of Lansing Strain of Poliomyelitis Virus in Ice Cream. C. L. Byrd Jr.—p. 55.

Coronary Arteriosclerosis in Diabetics.—Coronary artery disease is frequent and severe in diabetic patients, particularly women, who have had the disease for a long time. A group of 50 diabetic patients were studied to determine the effect of dia-

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Titles marked with an asterisk (*) are abstracted.

betic control on prevention or postponement of coronary artery disease. Fifteen patients whose diabetic control seemed to have been reasonably good had had diabetes for an average of 17.7 years before the onset of manifest coronary artery disease, which occurred at an average age of 65.6 years. On the other hand, 23 with poor control had onset of manifest coronary artery disease after an average of 12 years of diabetes at an average age of 56.2 years. Mildness of diabetes seemed to be less of a factor in postponement of coronary artery disease than good control. Early diagnosis and close cooperation between patient and physician is of vital importance if the patient is to achieve and maintain optimal control of his diabetes. In this series the patients with the best-controlled diabetes seemed to be those with the best understanding of the disease. Optimal control includes making efforts to consider the diabetic patient as a whole; to make his care as economical as is feasible; to keep his weight, blood pressure and activities normal; and to maintain the patient's proper motivation.

American Journal of Surgery, New York

83:125-248 (Feb.) 1952

Cardiorespiratory Failure: Analytic Review of Literature (1925-1951) with Report of Four Cases. A. H. Becker.—p. 125.
Cardiac Arrest During Anesthesia and Surgical Operations. T. C. Bost. —p. 135.
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Blood Volume Deficits in Carcinoma of Colon: Study of 25 Cases T. V. Morton Jr., R. I. Siegel and H. A. Schulte.—p. 170.
*Manipulation of Herniated Intervertebral Disk. J. N. Wilson and F. W. Ilfeld.—p. 173.
Postappendiceal Abscess in Rectovesical Pouch: Transrectal Drainage. M. B. Welborn.—p. 176.
Tumors of Buttocks: With Report of 30 Cases and Review of Literature. H. Charache.—p. 181.
Analgesia Following Anorectal Surgery Using Oil-Soluble Anesthetic. R. Ehrlich.—p. 185.
*Masking of Acute Abdominal Conditions with Antibiotics. F. R. Cole. —p. 189.
Uterovaginal Extirpation for Procidentia. J. V. Ricci and C. H. Thom. —p. 192.

Midforceps Operations.—Weinberg defines a midforceps operation as one in which a fetus that presents cephalically and whose presenting part is located in the mid-pelvis, i. e., between the planes of the ischial spines and ischial tuberosities, is delivered by forceps. He discusses indications for this operation, its technique, and the results obtained in 1,150 midforceps operations in women who were subjected to roentgen pelvimetry either before or during labor. The results were almost as good as could be expected in spontaneous deliveries, and much better than in any series of cesarean sections with which the author is familiar. The uncorrected fetal mortality was 0.8%, corrected to 0.6%. There was no maternal mortality. The indications for the operation were arrest in 92.8%; in 40.8% of cases arrest was due to malposition and 39.6% to poor contractions. In only 0.3% was it due to disproportion; distress accounted for 2.5%. The author points out that the current literature urges almost complete elimination of the midforceps operation. He feels that the unfavorable results obtained by Steer are largely explained by the fact that disproportion existed in 70% of Steer's cases, whereas in his own material disproportion existed in only 0.3% of the cases. In fact, he never performs a midforceps operation in the presence of a known disproportion. The cases of disproportion in his series were unrecognized cases of very large babies in pelvis of average size. He concludes that the good results in midforceps operations performed in the absence of fetopelvic disproportion and unfavorable architecture indicate its retention rather than its almost complete replacement by cesarean section.

Manipulation of Herniated Intervertebral Disk.—Since manipulation of the lower back has been said to be beneficial in herniated intervertebral disk, Wilson and Ilfeld examined 18 patients with symptoms of herniated intervertebral disk by fluoroscopy with ethyl iodophenylundecylate (pantopaque®) administered by intraspinal injection before and after manipulation. The clinical signs and symptoms of these patients consisted of back pain with radiation down the posterior aspect of one or both legs, decreased ankle jerk, positive Lasegue's sign, atrophy of the thigh or calf, sciatic notch tenderness, and muscular weakness and hypesthesia in the peripheral nerve distribution of the lower lumbar and sacral nerves. Myelographic studies with ethyl iodophenylundecylate were done on all 18 patients. Thirteen showed defects that were interpreted as due to herniated intervertebral disk. Immediately following the initial visualization of the iodophenylundecylate column by fluoroscopy and with the compound still in place, the rotary type manipulation was carried out with the patient on the x-ray table. No change in the x-ray appearance of the defect was noted in 12 patients following rotary manipulation of the spine. In one patient a slight increase in the size of the defect was seen after manipulation, as compared with the x-ray appearance before manipulation. This patient noted pain for two to three days afterward. Inspection at surgery revealed a protruded disk with an intact annulus. The authors cite experiences by several observers who have discussed the effects of low back manipulation on the herniated intervertebral disk. Key regarded it as possible that further nerve root damage may be caused by mechanical pressure of the herniated disk during the act of manipulation. Poppen, in a series of 400 cases of herniated intervertebral disk verified at operation, noted four cases in which sudden complete paraplegia resulted following manipulation. Thibodeau reports two similar cases and states that low back manipulation is contraindicated in the presence of symptoms of a herniated disk.

Masking Abdominal Conditions with Antibiotics.—The broad therapeutic spectrum of the antibiotics tempts physicians to use them indiscriminately and to neglect careful observation and exact diagnosis. In surgical emergencies the use of antibiotics may distort the symptoms as well as the objective findings; they reduce the fever and abdominal symptoms and normalize the leukocyte count. Despite this, however, the pathological process continues, and thrombosis of vessels with gangrene and rupture may occur. It is essential that the diagnosis be established before therapy with antibiotics is instituted. Cole presents four cases to illustrate those facts; in two the children had appendicitis and in the other two the patients had cholecystitis. In both of these conditions the best results are obtained with early surgery. Although the antibiotics have increased the period of safety beyond 48 hours, watchful waiting is not advisable. The use of antibiotics has given bizarre pictures in acute appendicitis as well as acute gallbladder disease. To depend on antibiotics as the treatment of choice in these diseases is to discard the only sure aid for these patients.

Am. J. Tropical Medicine & Hygiene, Baltimore

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Cultural Requirements of Endamoeba Coli and Comparative Effects of Drying on Cysts of E. Coli and E. Histolytica. L. V. Reardon, E. Verder and C. W. Rees.—p. 155.
Experimental Endamoeba Histolytica Infections in Rabbits with Reference to Chemotherapy. G. W. Luttermoser, W. T. Haskins, N. Coleman and J. R. Jumper.—p. 162.
Dysenteries in the Armed Forces. A. V. Hardy, R. P. Mason and G. A. Martin.—p. 171.

Diagnosis of Amebiasis.—The presumptive diagnosis of amebiasis needs laboratory confirmation. A large proportion of infected individuals present no clear-cut symptoms referable to this disease. Although the time may come when diagnosis of amebiasis can be made by serologic methods, today proof of infection requires that the ameba must be demonstrated under the microscope. In unformed stools and tissue aspirates Endamoeba histolytica occurs in the trophozoite stage. In the active state it will exhibit a progressive movement of pseudopodia, which is different from that of other amebas and phagocytic cells. Any cell that does not have the motility of E. histolytica trophozoites can not be safely identified as E. histolytica. Material suspected of containing active or encysted E. histolytica should first be examined in a drop or two of isotonic sodium chloride solution as an unstained cover-glass-mounted film. If trophozoites are present, their motility can be studied; if cysts are revealed, they frequently contain characteristic rod-shaped chromatoidals. Likewise, an iodine-stained wet mount should be made to observe the structural characters of the nuclei, which have a central karyosome and peripheral chromatin beads just within the nuclear membrane. Usually there is no need to prepare permanent hematoxylin-stained films, but at times these are needed to differentiate the trophozoites from those of other intestinal amebas and to provide a clearer picture of the nuclear characters in the cysts if these organelles are obscured in the wet film by dense deposits of glycogen or masses of chromatoidals. If the material submitted contains only doubtful forms, fresh specimens should be requested for study. This is safer than to hazard a positive diagnosis on unsatisfactory material. Following direct film examination, the zinc sulfate concentration technique should be carried out on formed stools for recovery of cysts, which may be too few to be present in a single direct fecal film. A single iodine-stained film is employed for this concentrate. For dependable laboratory diagnosis of amebiasis the technician must be trained in this special field. During the past few years the laboratory section of the Public Health Service Communicable Disease Center in Atlanta has provided such training courses.

Anesthesiology, New York

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Importance of Biometry in Anesthesiology. K. S. Ting.—p. 1.

Device Producing Regulated Assisted Respiration: II. Prevention of *Hypoventilation and Mediastinal Motion During Intrathoracic Surgery.* J. V. Maloney Jr., W. S. Derrick and J. L. Whittenberger.—p. 23.

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Technics in Pediatric Anesthesia—Nonrebreathing Method. C. R. Stephen. —p. 77.

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Experiences in Use of General Anesthesia for Corrective Rhinoplasty. J. A. Tamerin and E. J. De Polo.—p. 94.

*Prevention of Headache Following Spinal Anesthesia: *Use of Epidural Saline: Preliminary Report.* M. S. Kaplan and J. G. Arrowood.—p. 103.

Prevention of Headache Following Spinal Anesthesia.—The etiology and previous efforts at prevention of the headache that follows spinal anesthesia are briefly discussed, and then the authors review observations on 300 unselected patients who received spinal anesthesia for surgical and obstetric procedures during the period from December, 1949, to November, 1950. The anesthetic used was tetracaine (pontocaine®) hydrochloride in 10% dextrose solution or distilled water. Phenylephrine (neo-synephrine®) hydrochloride in doses of 3 to 5 mg. was used to prolong the anesthesia. After the operation, nurses were instructed to keep the patient flat in bed with a low pillow under his head for two to four hours. Then the head of the bed was raised gradually 5 degrees every 15 minutes for two hours. Patients were kept flat for variable lengths of time and 54 were raised up suddenly. Twenty-one of the 300 patients developed postspinal headache. Of these, five were raised suddenly and 16 were raised in the prescribed manner. Between March and November, 1950, the authors studied a second group of 100 patients, who were managed in an identical manner, except that the following variation in technique was used: After the anesthetic solution was introduced into the subarachnoid space, the needle was withdrawn into the epidural space. Then 10 to 20 cc. of isotonic sodium chloride solution was deposited before the needle was withdrawn. The amount injected depended on the resistance encountered during the injection. Only 1 of the 100 patients treated in this manner had headache following spinal anesthesia. The efficacy of this method appears to depend on the building up of a head of pressure near the dural defect and preventing leakage of spinal fluid into the epidural space. This prevents a concomitant decrease in cerebrospinal fluid pressure. It is not clear whether this saline solution remains in the region long enough to accomplish its mission. It is conceivable that it prevents leakage long enough for a fibrin clot to form, or for the piaarachnoid to seal the defect. There were no untoward effects in the 100 cases.

Cancer Research, Chicago

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Effect of Heat Inactivation on Precipitation of Serum Proteins by Means of Sodium Chromate *in Sera of Normal and Cancerous Subjects.* P. Koets.—p. 100.

Hemolysins in Spontaneous Mouse Breast Tumors as Compared to Those *in Normal Mouse Tissue.* E. Ponder and J. Nesmith.—p. 104.

Effect of Prior Injections of Tissue Antiserums on Survival of Cancer Homoiografts in Mice. N. Kaliss and N. Molomut.—p. 110.

Serum Tributyrinase Levels *in Mice of C57, C3H, and A Strains.* J. Tuba. —p. 113.

Effects of Freezing, Storage, and Thawing upon Transplantability of *Mouse Leukemic Cells.* R. M. Gabrielson, J. T. Syverton and R. Kirschbaum.—p. 117.

Oxidative Phosphorylation by Mitochondria of Transplantable Mouse Hepatoma and *Mouse Liver.* R. K. Kielley.—p. 124.

Electrophoretic Changes in Proteins from Livers of Rats Fed 4-Dimethylaminoazobenzene. H. E. Hoffman and A. M. Schechtman.—p. 129.

Inhibition of Human Mammary and Prostatic Cancers by *Adrenalectomy.* C. Huggins and D. M. Bergenstal.—p. 134.

Adrenal Tumors and Other Pathological Changes in Reciprocal Crosses in Mice: I. Strain DBA Crossed with Strain CE and Reciprocal. G. W. Woolley, M. M. Dickie and C. C. Little.—p. 142.

*Growth of Carcinoma Implants in Fed and Fasted Rats. G. A. LePage, V. R. Potter, H. Busch and others.—p. 153.

In Vivo Studies on Incorporation of Glycine-2-C^{14} into Proteins and Nucleic Acid Purines. E. P. Tyner, C. Heidelberger and G. A. LePage. —p. 158.

Growth of Carcinoma Implants of Fed and Fasted Rats.—Control rats and rats bearing multiple implants of Flexner-Jobling carcinoma were fed or fasted and the weight changes determined for tumors and normal tissues. Glycine-2-C^{14} was used to label the tissue proteins and to permit a study of amino acid exchange. Animals fasted five days lost 31% of their body weight and 39% of their liver protein. Tumors on such animals grew almost as rapidly as on fed rats. It was observed that in either fed or fasted rats, the specific radioactivity of the proteins and nucleic acids of normal tissues declined with time, as did the total radioactivity per organ. In contrast, the total radioactivity of the tumor proteins increased rapidly. It was concluded that protein metabolism in the Flexner-Jobling carcinoma is essentially, if not completely, a "one-way passage," and that the proteins of this tumor are not available to the host for fuel during starvation. It is suggested that the type of experiment described herein be used to study host-tumor relationships for a variety of tumors, including some that grow more slowly and are less anaplastic than the Flexner-Jobling carcinoma.

Florida Medical Association Journal, Jacksonville

38:523-590 (Feb.) 1952

Advancing Field of Thoracic Surgery. D. C. Daughtry and J. G. Chesney. —p. 541.

Experiences with Corticotropin and Cortisone in Pulmonary Disease. J. Reiss, G. L. Baum and M. Kovnat.—p. 550.

The Fragile Male. W. T. Sowder.—p. 553.

Epidemiologic Importance of Man's Transportation of Mosqiuto Vectors of Malaria. J. B. Hall.—p. 555.

Technic for Early Postoperative Care of "Wet Colostomies." M. Suter. —p. 558.

Illinois Medical Journal, Chicago

101:57-108 (Feb.) 1952

Bronchoscopic Problems in the Newborn. P.' H. Holinger and K. C. Johnston.—p. 68.
Drug Addiction in Chicago. J. J. McLaughlin and W. H. Haines.—p. 72.
Practical Office Syphilology. L. M. Schuman.—p. 78.
*Ambulatory Outpatient Dicumarol Therapy. A. T. Johnson.—p. 83.
Obscure Herniated Intervertebral Discs. P. C. Bucy.—p. 89.
Emergency Home Childbirth Nursing Program. F. O. Tonney and M. Scaife.—p. 92.
Arterial Embolectomy: Factors Considered in Selection of Patients for Operation. W. Klingensmith and F. V. Theis.—p. 94.
Primary Torsion of Omentum. W. H. Cave.—p. 97.

Ambulatory Bishydroxycoumarin Therapy.—In patients with chronic recurrent thrombophlebitis, multiple sclerosis, rheumatic heart disease with repeated embolism, recurrent myocardial infarction, and various eye conditions it may be advisable to continue treatment with bishydroxycoumarin (dicumarol®) over long periods. According to prevailing concepts, it would be necessary to hospitalize these patients indefinitely. This, however, would be financially impossible for most patients. Ambulatory treatment with bishydroxycoumarin has been tried by several observers, and Johnson describes his own observations on 12 patients who were treated in this way. Usually the patients were hospitalized for approximately two or three weeks, during which time a dosage schedule was ascertained. The dosage varied from 50 mg. four days weekly to as much as 100 mg. daily, seven days weekly. The average dosage has thus varied from 200 to 700 mg. weekly. The patient was sent home to follow his dosage, and the prothrombin concentration was determined at the laboratory once weekly. After two or three weekly prothrombin determinations, the interval between determinations was extended to two weeks and finally to three weeks. In some patients, treatment with bishydroxycoumarin was started in the office. In order to avoid misunderstandings, the dosage of bishydroxycoumarin was usually written on the prescription blank. All patients were warned regarding the signs of excessive dosage, and were told to report immediately should hematuria, ecchymoses, or abnormal bleeding occur. The prothrombin levels were always determined in the same laboratory by the same technician. By observing all precautions, it has been possible to employ ambulatory treatment with bishydroxycoumarin for from 3 to 24 months. Only one patient had temporary hematuria, which may have been due to a renal disorder. Patients requiring bishydroxycoumarin need not be deprived of it if hospitalization is not possible.

Journal of Experimental Medicine, New York

95:119-230 (Feb.) 1952

*On Response of Genetically Resistant and Susceptible Rabbits to Quantitative Inhalation of Human Type Tubercle Bacilli and Nature of Resistance to Tuberculosis. M. B. Lurie, S. Abramson and A. G. Heppleston.—p. 119.
Quantitative Aspects of Multiplication of Influenza A Virus in Mouse Lung: Relation Between Degree of Viral Multiplication and Extent of Pneumonia. H. S. Ginsberg and F. L. Horsfall Jr.—p. 135.
Enhancing Effect of Urethane on Severity of Infection with Pneumonia Virus of Mice (PVM). G. S. Mirick, J. MacL. Smith, C. I. Leftwich Jr. and W. B. Leftwich.—p. 147.
Albumin and Globulin Circulation in Experimental Ascites: Relative Rates of Interchange Between Plasma and Ascitic Fluid Studied with C^{14}-Labeled Proteins. F. W. McKee, C. L. Yuile, B. G. Lamson and G. H. Whipple.—p. 161.
Effect of Influenza Virus on Cilia and Epithelial Cells in Bronchi of Mice. C. G. Harford and A. Hamlin.—p. 173.
Effect of Spermine on Tubercle Bacilli. J. G. Hirsch and R. J. Dubos.—p. 191.
Survival of Staphylococci Within Human Leukocytes. D. E. Rogers and R. Tompsett.—p. 209.

Resistance to Tuberculosis.—Lurie and associates show that if genetically susceptible and resistant rabbits simultaneously inhale virulent human type tubercle bacilli, the resistant animals usually overcome the infection completely in a given time, while in the susceptible animals, a disease of varying extent often involves the greater part of the lung parenchyma. The allergic response, the antibody production, the rate of growth and destruction of tubercle bacilli in the lungs, and the associated histological responses were analyzed in these resistant and susceptible animals. The inhaled tubercle bacilli multiply only a short time in the resistant rabbits and are usually rapidly and completely destroyed. In the susceptible rabbits the bacilli multiply profusely for a much longer time and persist in large numbers even months after inhalation. Whatever the cause of the more rapid destruction of tubercle bacilli in the resistant animal, the resulting more rapid release of antigens enhances the development of allergic sensitivity and antibodies. The development of an acquired resistance against tubercle bacilli of the human type is sufficiently rapid to affect the genesis of the initial gross primary pulmonary foci that result from the inhalation of a given number of bacilli. The greater the genetic resistance the fewer the initial primary foci. Variations in genetic resistance are essentially variations in the rate of development of acquired resistance.

Journal of Immunology, Baltimore

68:115-218 (Feb.) 1952

Analysis of Immunity in Experimental Tsutsugamushi Disease. T. Kuwata.—p. 115.
In Vivo and in Vitro Studies of Serological Specificity Among Viruses of Psittacosis-Lymphogranuloma Venereum Group. M. R. Hilleman, D. A. Haig and R. J. Helmold.—p. 121.
Studies on Immunization Against Plague: I. Isolation and Characterization of Soluble Antigen of Pasteuralla Pestis. E. E. Baker, H. Sommer, L. E. Foster and others.—p. 131.
Id.: II. Complement-Fixation Test. T. H. Chen, S. F. Quan and K. F. Meyer.—p. 147.
Cellular Transfer in Humans of Delayed Cutaneous Reactivity to Hemolytic Streptococci. H. S. Lawrence.—p. 159.
On the Chromatographic Behavior of the T Coliphages in Paper Strips. C. C. Shepard.—p. 179.
Immunogenic and Chemical Properties of Fractions Prepared from Ten Types of Group A Streptococci. J. Smolens and H. F. Warner.—p. 185.
Interchangeability of Complement Components of Different Animal Species: IV. In Hemolysis of Rabbit Erythrocytes Sensitized with Sheep Antibody. C. E. Rice and P. Boulanger.—p. 197.
Antibody Response of Human Subjects to Epidemic Typhus Vaccine Three to Eight Years After Previous Immunization. E. S. Murray, A. Ofstrock and J. Snyder.—p. 207.

Journal of Infectious Diseases, Chicago

90:1-104 (Jan.-Feb.) 1952. **Partial Index**

*Experimental Studies on Dengue: I. Isolation, Identification and Modification of Virus. S. Hotta.—p. 1.
*Id.: II. Skin Reaction Observed During Epidemic of Osaka, Japan, in 1944. S. Hotta.—p. 10.
Effect of Thyroxine and Radioactive Iodine on Resistance of Mice to Infection with Murine Pneumonitis Virus. E. Weiss, J. W. Moulder and M. K. Itatani.—p. 21.
Respiratory Infection in Rabbit: Enzootic Caused by Pasteurella Lepiseptica and Attempts to Control It by Vaccination. M. M. Alexander, P. B. Sawin and D. A. Roehm.—p. 30.
Studies of Effect of Antibiotics on Infections with Mouse Pinworm Aspiculuris Tetraptera: II. Actions of Neomycin, Dihydrostreptomycin and Chloramphenicol. H. S. Wells.—p. 34.
Studies on Biology of Cryptococcus: IV. Isolation of Highly Polymerized Polysaccharide from Encapsulated Strains. G. E. Foley and L. L. Uzman. —p. 38.
Agglutinins for Sheep Cells in Human Serums and Their Relationship to A_2 Isoagglutinogen-Like Substance in Infectious Organisms. J. Oliver-González.—p. 44.
Serological Identification of Cultures of Clostridium Histolyticum as Group III of Proteolytic Clostridia. J. W. Mandia.—p. 48.
Effect of Selected Chemical Substances on Phagocytosis. W. J. Nungester and A. M. Ames.—p. 51.
Electrophoresis Studies of Leukocytes and Bacteria in Relation to Mechanisms of Phagocytosis. W. J. Nungester, A. M. Ames and W. Lanning.—p. 61.
Laboratory Studies on Histoplasmosis: I. Effect of Humidity and Temperature on Growth of Histoplasma Capsulatum. R. W. Menges, M. L. Furcolow, H. W. Larsh and A. Hinton.—p. 67.
Relative Efficiency of Different Culture Mediums in Isolation of Certain Members of Salmonella Group. N. B. McCullough and A. F. Byrne.—p. 71.
Chemotherapy of Experimental Clostridial Infections. J. S. Kisner, G. C de Mello, D. H. Reichard and J. H. Williams.—p. 76.
Bacteriologic Studies of Experimental Salmonella Infections in Chicks. K. C. Milner and M. F. Shaffer.—p. 81.
Serological Study of Certain Members of Aerobic Nonpathogenic Neisseria Group. G. S. Warner, J. E. Faber Jr. and M. J. Pelczar Jr.—p. 97.

Studies on the Dengue Virus.—During dengue epidemics in Japan from 1942 to 1945, three strains of dengue virus were isolated by injecting blood taken from patients during the febrile stage into brains of white mice and carrying on mouse brain passage thereafter. Serial transmission of the virus through mouse brains resulted in a change in its properties. It lost its ability to induce in humans symptoms characteristic of the original disease, but was still able to produce in inoculated persons a protective immunity against virulent dengue virus as well as a virus-neutralizing antibody, on which titration was performed. The virus was reisolated from a person so inoculated.

Skin Reaction Observed During a Dengue Epidemic.—It is estimated that during the 1944 epidemic of dengue in Japan there were at least 100,000 cases. An antigen prepared from mice that showed typical signs of infection after an intracerebral inoculation of dengue virus was injected into the stretched skin of the upper arm of patients who either were still in the febrile stage of dengue or in whom the fever had subsided. Control tests were made with fluid prepared from normal mouse brain, and the antigen as well as the fluid was tested in healthy subjects and in patients with febrile diseases other than dengue. In dengue fever patients the reaction at the injected site consisted of induration, a red circular patch, or a combination of these two, including vesicle formation or necrosis under certain conditions; this was considered specific for dengue. Patients with scarlet fever showed no reaction; patients with typhoid fever and with murine typhus showed a distinct but generally less severe reaction; and healthy adults showed no reaction. No group reacted to the control fluid.

Journal Lab. and Clinical Medicine, St. Louis

39:1-168 (Jan.) 1952

Testament of Duty: Some Strictures on Moral Responsibilities in Clinical Research. W. B. Bean.—p. 3.
Blood Pressure in Aorta During Resection and Repair of Coarctation of Aorta. J. Fuller, B. E. Taylor, O. T. Clagett and E. H. Wood.—p. 10.
Study of Serum Electrolytes (Na, K, Ca, P) in Patients with Severely Decompensated Portal Cirrhosis of Liver. D. S. Amatuzio, F. Stutzman, N. Shrifter and S. Nesbitt.—p. 26.
Estimation of Ascitic Fluid Volumes. L. Baker, R. C. Puestow, S. Kruger and J. H. Last.—p. 30.
Simultaneous Determination of Total Body Water by Antipyrine and Deuterium Oxide; Evaluation of Methods on Edematous Subjects. W. W. Hurst, F. R. Schemm and W. C. Vogel.—p. 36.
Urine-Blood Ratios of Deuterium Oxide in Man. W. W. Hurst, F. R. Schemm and W. C. Vogel.—p. 41.
Serum Mucoproteins as Aid in Differentiation of Neoplastic from Primary Parenchymatous Liver Disease. E. M. Greenspan, B. Tepper, L. L. Terry and E. B. Schoenbach.—p. 44.
Effects of Modified Human Globin on Renal Function in Cirrhosis of Liver. J. L. Brandt and A. Caccese.—p. 57.
Rates of Equilibration of Inulin and Mannitol Between Plasma and Interstitial Water in Edematous States. J. H. Last, G. O. McDonald, R. A. Jones and E. E. Bond.—p. 62.
Physiological Changes During Perfusion of Isolated Intestinal Loop in Chronic Uremia. W. S. Thompson Jr., J. J. Lewis and A. S. Alving.—p. 69.
Riboflavin Excretion During Pregnancy and Early Lactation. A. Brzezinski, Y. M. Bromberg and K. Braun.—p. 84.
Method for Collection and Quantitative Determination of Sebum: Its Application to Investigation of Human Sebum Secretion. T. H. Lorenz, D. T. Graham and H. G. Wolff.—p. 91.
Variations in Proteolytic and Antiproteolytic Reactions of Serum: Effect of Disease, Trauma, X-Ray, Anaphylactic Shock, ACTH, and Cortisone. E. E. Clifton.—p. 105.
Epidemic Infantile Diarrhea Associated with Escherichia Coli 111, B_4. R. I. Modica, W. W. Ferguson and E. F. Ducey.—p. 122.
*Quantitative Antibody Studies in Man: II. Relation of Level of Serum Proteins to Antibody Production. D. L. Larson and L. J. Tomlinson.—p. 129.
Effect of Trypsin on Hemagglutinogens Determining Eight Blood Group Systems. L. J. Unger and L. Katz.—p. 135.
Effect of Heating Thromboplastic Activity of Rabbit Brain Extract: New Test for Diagnosis of Hemophilia. A. J. Quick, W. F. Stapp and C. V. Hussey.—p. 142.

Relation of Serum Proteins to Antibody Production.—A number of reports have appeared indicating that animals and man with hypoalbuminemia, with or without hyperglobulinemia, have impaired ability to produce circulating antibodies. Other investigators have been unable to confirm these observations. Larson and Tomlinson report studies on antibody responses in 12 patients with abnormal levels of serum albumin and globulins, using quantitative immunochemical techniques. There appeared to be no relation between total serum protein, total serum albumin, total serum globulins, total serum euglobulins, electrophoretic pattern, and ability to form antibodies. In the patients studied the ability to maintain elevated total serum gamma globulin levels had no apparent relation to the ability to produce antibody globulin. Four patients with cirrhosis of the liver had normal antibody responses. Four patients with multiple myeloma had notably poor antibody responses and unusually low titers of C antibody.

Journal of Pediatrics, St. Louis

40:143-268 (Feb.) 1952

*Subacute Mercury Poisoning (Acrodynia) Caused by Protiodide of Mercury. Successful Treatment with BAL. A. E. Fischer and H. L. Hodes.—p. 143.
Investigations on Bacterial Flora, pH, and Sugar Content in Intestinal Tract of Infants. G. J. Barbero, G. Runge, D. Fischer and others.—p. 152.
Some Special Problems in Use of ACTH and Cortisone Therapy in Children: Report of Three Cases. R. Wilson and R. Rowe.—p. 164.
Latent Hemolytic Disease of Newborn Infant: Variable Quantitative Relationship Between Amount of Maternal Rh Antibodies and Extent of Damage to Rh-Positive Infant. J. Grundorfer.—p. 172.
Melena in Newborn Infant. I. H. Rozenfeld and J. R. McGrath.—p. 180.
Results of Administration of Vitamin B_{12} to Newborn Infants. R. F. Chinnock and H. W. Rosenberg.—p. 182.
Case of Congenital Cystinuria. H. Prakken.—p. 186.
*Twelve Cases of Testicular Tumors Occurring During Infancy and Childhood. C. Rusche.—p. 192.
Cardiac Complications of Pertussis. S. H. Walker.—p. 200.
Umbilical Hernia: I. Occurrence of Infantile Type in Negro Infants and Children. E. P. Crump.—p. 214.
Pediatric Resident Program in Nonuniversity Hospital. H. E. Thelander.—p. 224.
Dermatitis Gangrenosa Infantum. A. Gedarovich.—p. 228.
Intoxication with Veratrum Viride. A. J. Newman.—p. 233.
Engelmann's Disease (Progressive Diaphyseal Dysplasia). L. S. Lavine and M. T. Koven.—p. 235.
Omental Segmental Infarction: Report of Two Cases in Children. F. P. Catanzaro and J. E. Farley Jr.—p. 240.

Dimercaprol in Subacute Mercury Poisoning.—The occurrence of erythredema polyneuropathy (acrodynia) is reported in a boy aged 3½ years who was treated for warts with 7.5 mg. of protiodide of mercury three times daily for 12 days. Without consulting the physician, the mercury was administered by the child's mother for an additional 12 days. Unaware of this second course of treatment, the dermatologist again prescribed protiodide of mercury. The patient became irritable, had painful lower extremities, hypotonia, intense and persistent photophobia, alopecia, slight rise of temperature, excessive perspiration, diarrhea, loss of weight, tachycardia, and anorexia. The patient's urine gave a negative reaction when tested for the presence of heavy metal by the Ganassini modification of the Reinsch test. He was given 20 mg. of dimercaprol every four hours intramuscularly on the first day and 30 mg. every four hours on the second day. The dose of the drug then was increased to 40 mg. and the total amount of the drug administered was 2,300 mg. given over 16 days. The second three day specimen of urine, which was collected one day before the first injection of dimercaprol as well as during the first two days of dimercaprol therapy and tested according to the sensitive Gettler-Lehman technique, contained 333 µg of mercury per liter, while the next three days specimen, collected during the third, fourth, and fifth days of treatment with dimercaprol, showed a concentration of mercury of 500 µg per liter. Thereafter, despite continuous use of dimercaprol, the concentration of mercury in the urine declined, and was within normal limits from the ninth day of treatment. Photophobia was improved, the patient gained weight, and complete recovery followed. The author's case illustrates the need for repeated examination of the urine until mercury has been demonstrated in the urine and until clinical improvement has occurred. A sensitive test must be employed. Dimercaprol apparently begins to exert its influence promptly so that, if no mercury is detected after three days of treatment, one may be reasonably certain that mercury has not been retained in the body.

Testicular Tumors in Infancy and Childhood.—Of 11 boys with malignant and 1 with benign tumor of the testis, 9 were aged less than 3 years at the time of diagnosis. Four of these tumors were present at birth. Of the 12 tumors, 8 were adult teratomas, 3 embroyonal carcinomas, and 1 dermoid cyst. Of the 12 patients, 2 died within three and four months respectively after the diagnosis. Since there are few diseases that cause enlargement of scrotal contents in childhood, every intrascrotal swelling occurring before puberty should be considered a malignant tumor until proved otherwise. Malignant tumors of the testicle are a local disease for a while. If the diagnosis is made and simple orchiectomy performed during this period, the prognosis for cure is excellent. Therefore, after a diagnosis of tumor is established, immediate extirpation is mandatory. Of the author's 12 patients, 10 are alive without evidence of disease, 8 of whom have lived five years or longer and may be considered cured; of these 8, 6 had adult teratomas, 1 an embryonal carcinoma, and 1 a dermoid cyst. Preoperative irradiation in tumors of the testicle should be condemned for the following reasons: valuable time may be lost before the tumor is removed; irradiation destroys the original structure of the tumor, thus complicating an accurate microscopic diagnosis; benign tumors inadvertently are irradiated; and the spermatogenic function of the remaining testis may be destroyed. Postoperative irradiation is dependent on the histological properties of the tumor. Teratomas, which account for the largest percentage of testicular neoplasms in children, are radioresistant. Seminomas, which occur extremely infrequently in childhood, are the most radiosensitive tumors.

J. Pharmacology & Exper. Therap., Baltimore

104:115-252 (Feb.) 1952. Partial Index

Effect of Sodium Pentobarbital on Toxicity of Certain Antihistamines. E. L. Way and W. C. Herbert.—p. 115.
Hydrolysis of Local Anesthetics by Human Serum Cholinesterase. W. Kalow.—p. 122.
Reliability and Validity of Tooth Pulp Algesimetry. S. C. Harris and L. E. Blockus.—p. 135.
Early Respiratory Depression by Curare and Curare-Potassium Antagonism. T. H. Li, B. R. Jacobs, D. M. Aviado Jr. and C. F. Schmidt.—p. 149.
Absorption of Nicotine in Tobacco Smoking. L. A. Greenberg, D. Lester and H. W. Haggard.—p. 162.
Mode of Action of α-Phenyl γ-(-2-Pyridyl)-Propyl Ketone. I. H. Slater, J. F. O'Leary and D. E. Leary.—p. 168.
Toxicological Studies of Orthophenylphenol (Dowicide 1). H. C. Hodge, E. A. Maynard, H. J. Blanchet Jr. and others.—p. 202.
Effect of Ouabain on Respiration of Isometrically Contracting Rat Auricle. V. R. Ransom and T. A. Loomis.—p. 219.
Diphenhydramine Hydrochloride, U.S.P. XIV, and Respiratory Tract Fluid. S. M. R. Bidwell and E. M. Boyd.—p. 224.

Medical Annals of District of Columbia, Washington

21:61-122 (Feb.) 1952

Cancer Problem. G. Hadfield.—p. 61.
Sympathomimetic Amines in Treatment of Peripheral Circulatory Failure. A. M. Lands and M. L. Tainter.—p. 63.
Thermal Injuries in Atomic Warfare. E. I. Evans.—p. 69.
Clinical Evaluation of Vergitryl, a New, Highly Purified Extract of Veratrum Viride. F. A. Finnerty Jr. and E. D. Freis.—p. 75.
Factors in Selection of Cases for Surgery .on Heart Values. E. C. Andrus.—p. 77.
Elements of Psychotherapy in General Medical Practice. R. L. Jenkins.—p. 80.
Metastatic Melanoma of Bladder with Possibility of Being Primary in Thyroid Gland: Report of Case. W. C. Stirling and O. B. Hunter Jr.—p. 84.

Military Surgeon, Washington, D. C.

110:87-164 (Feb.) 1952. Partial Index

New Concepts in Aviation Medicine. D. C. Ogle.—p. 87.
Medical Service of Exercise "Southern Pine." L. H. Ginn Jr. and S. C. Brockman.—p. 91.
Health Organization and Problems in Defense Impact Areas. J. W. Mountin.—p. 97.
Combat Medical Practice. E. R. Hering.—p. 102.
What Every American Should Know About Japan. J. C. Moloney.—p. 106.
Early Treatment of Burns. S. L. Koch.—p. 116.
Cancer in Female Soldiers. D. Lindsey, G. Accetta and M. L. Delp.—p. 126.

New England Journal of Medicine, Boston

246:161-204 (Jan. 31) 1952

*Anterior-Rootlet Rhizotomy: Method of Controlling Spasm with Retention of Voluntary Motion. D. Munro.—p. 161.
*Clinical Evaluation of Aureomycin and Chloramphenicol in Herpes Zoster. E. H. Kass, R. R. Aycock and M. Finland.—p. 167.
Activation of Latent Herpes Simplex by Trigeminal Sensory-Root Section. C. A. Carton and E. D. Kilbourne.—p. 172.
Jaundice of Hepatic Origin During Course of Methyl-Testosterone Therapy. I. B. Brick and L. H. Kyle.—p. 176.
Hormonal Treatment of Cancer. I. T. Nathanson and R. M. Kelley.—p. 180.

Anterior Rootlet Rhizotomy for Control of Spasm.—Munro is concerned with the treatment of paralyzing spasms that prevent the use of any remaining voluntary motor activity of the spastic limb. The type of spasm that paralyzes *without destroying* voluntary motion in a limb is seen in its most characteristic form in patients with partial injuries of the spinal cord. It also occurs as a spastic quadriplegia or diplegia in children who are suffering from the late results of birth injuries. The author evaluates the various types of treatment that have been recommended and states that it occurred to him that the relief of this spasm might be approached at the spinal rootlet level and the motor side of the reflex arc. Every other or every third rootlet of the designated roots, whether cervical or dorsolumbosacral, is cut. Before and during section, the roots are identified by electrical stimulation. The minimum voltage required to produce pheripheral muscular contractions in the arm or leg is determined by intra-arachnoid stimulation of the anterior surface of the cord above each pair of roots before and after the rootlet section. A comparison of the two voltage levels is thought to indicate roughly the diminution of innervation that has been effected. The operation is not difficult, although it is less simple in the neck than in the dorsolumbar region. This procedure has now been carried out in three patients. Two patients had had injuries to the cervical spinal cord; the operation was performed on one to relieve pain and on the other in an attempt to increase the usefulness of the patient's right arm. The third operation was dorsolumbar, and was done in the hope of increasing the mobility and raising the physical educational level of a 2-year-old child with cerebral spastic paralysis of both legs due to a birth injury. The results in the two patients with injured cervical cords were satisfactory. The third patient has improved physically, intellectually, and psychologically. He gained, in the three months since the postoperative resumption of physical training, what would have required under other circumstances at least two years. On theoretical grounds, and as the result of extensive experience in treating detrusor and external urethral-sphincteric spasm, it appears that effective control of this type of spasm is best obtained by interfering with the motor rather than the sensory limb of the spinal sensorimotor reflex arc.

Aureomycin and Chloramphenicol in Herpes Zoster.—Of 72 patients with herpes zoster selected at random in the outpatient department of Boston City Hospital, 25 were treated with aureomycin, 25 with chloramphenicol, and 22 with analgesic tablets containing acetylsalicylic acid, phenacetin, and caffeine phosphate. No measurable effect was observed from the use of aureomycin or chloramphenicol compared with the use of a simple analgesic. The lesions of herpes zoster cleared within two weeks after their first appearance in more than three-fourths of the patients, and pain was completely relieved in less than two weeks from its onset in more than half the patients, irrespective of the type of therapy used. Postherpetic neuralgia (pain of more than one month's duration) occurred in only 18% of the cases in this study.

New Jersey Medical Society Journal, Trenton

49:45-86 (Feb.) 1952

Recent Advances in Orthopedic Surgery. H. Briggs, D. B. Eck and H. T. Hansen.—p. 49.
Gastric Ulcer with Multiple Gastro-Intestinal Diverticula. A. I. Friedman.—p. 52.
Clinical Experience with New Processed Coal Tar. S. J. Fanburg.—p. 56.
Lucaine Hydrochloride for Obstetrical Spinal Analgesia: Preliminary Report. C. De Vivo.—p. 58.
Tuberculosis Control Problems. I. Willner.—p. 61.
Recent Advances in Treatment of Extensive Burns. L. W. Eisenstodt.—p. 64.
Clinical Use of Cortisone and ACTH: Experience at Mountainside Hospital. H. Halprin.—p. 69.

Proc. Staff Meet. Mayo Clinic, Rochester, Minn.

27:73-88 (Feb. 13) 1952

Surgical Treatment of Presacral Tumors: Combined Problem. C. S. MacCarty, J. M. Waugh, C. W. Mayo and M. B. Coventry.—p. 73.
*Prothrombin and Intestinal Bacteria of Patients Being Prepared with Terramycin for Surgery of Bowel. W. H. Dearing, F. D. Mann and G. M. Needham.—p. 84.

Terramycin in Surgery of Bowel: Effect on Prothrombin.—Opinions regarding the effect of antibiotics on the prothrombin time of patients who are being prepared for intestinal surgery are conflicting. In this paper Dearing and associates present the results of studies of patients on whom determinations of prothrombin and bacterial cultures of the intestinal flora were made before and after administration of terramycin. The 18 patients had carcinoma of the colon or rectum that required surgical resection. Prothrombin, as determined by the Quick and the two stage methods, was not significantly altered, even though there was a marked reduction in the number of intestinal bacteria following oral administration of 3 gm. of terramycin daily for three to five days. Further experiments are in progress to determine whether prolonged administration of terramycin, plus a restricted diet, will affect the prothrombin time.

Psychiatric Quarterly, Utica, N. Y.

25:157-330 (Part II [Supplement]) 1951. **Partial Index**

Deja Vu Experience and Conscious Fantasy in Adults. A. H. Chapman and I. N. Mensh.—p. 163.
Preliminary Report on Use of Dance as Adjuvant in Therapy of Schizophrenics. D. W. Martin and N. Beaver.—p. 176.
Spontaneous Neurotic Clique Formation in University Students. B. Wedge, R. Pittenger and R. Whitman.—p. 191.
Evaluation of Ward Occupational Therapy with Regressed Patients. G. T. Nicolaou.—p. 202.
Recreation and Physical Education as Aid in Public Relations Between the Hospital and Local Community. R. M. Ballif.—p. 214.
Contribution to Concept of "Total Push" Therapy. A. Pauncz.—p. 220.
In-Service Training of Rehabilitation Personnel for Milieu Therapy. A. Paley.—p. 228.
Postgraduate Psychiatric Education: Survey of Course. W. E. Mayer Jr. —p. 237.

Psychosomatic Medicine, New York

14:1-70 (Jan.-Feb.) 1952

Directions and Problems in Psychiatric Research. (Special Article). J. D. Benjamin.—p. 1.
Critical Analysis of Some Current Concepts in Psychiatry: Implications of Monistic Mind-Body Concept for Diagnosis, Research, Etiology and Treatment. A. Wikler.—p. 10.
Life Situations, Emotions, and Backache. T. H. Holmes and H. G. Wolff.—p. 18.
Correlation Between Fluctuation of Free Anxiety and Quantity of Hippuric Acid Excretion. H. Persky, S. R. Gamm and R. R. Grinker. —p. 34.
Rorschach Pattern in Neurodermatitis. R. J. Levy.—p. 41.
Case of Psychoneurosis and Raynaud's Disease. G. Ingvarsson.—p. 50.
Mucous Colitis: Case Presentation. J. Weiss.—p. 53.

Rocky Mountain Medical Journal, Denver

49:91-164 (Feb.) [Part I] 1952

Craniocerebral Trauma: Basic Principles of Examination and Care. A. C. Johnson.—p. 113.
Medicine's Opportunity of a Lifetime. E. A. Hinds.—p. 120.
Prevention of Postoperative Pulmonary Infections by Inhalation of Micronized Penicillin. J. A. Dixon and E. B. Mahoney.—p. 122.
Congenital Atresia of Bile Ducts with Report of Case. P. D. Keller. —p. 126.

Southern Medical Journal, Birmingham, Ala.

45:87-170 (Feb.) 1952

*Use of Cutis (Skin) in Orthopedic Operations. H. A. Swart.—p. 87.
Granulomatous Lesions of Anorectal Region. R. J. Rowe.—p. 91.
Bronchiectasis: Clinical and Pathological Findings and Concepts of Pathogenesis. R. S. Jones and F. H. Cole.—p. 101.
*Post Injection Paralysis. G. D. Wilson and W. F. Hillier Jr.—p. 109.
Myxedema. G. T. Harrell.—p. 113.
Hematological Effects of Uremia. W. C. Levin and L. Gregory.—p. 121.
Treatment of Larva Migrans with Stibanose®: Preliminary Report. J. F. Wilson.—p. 127.
Rooming in: Modern Medicine Goes Old Fashioned. F. H. Richardson. —p. 131.
Diagnosis of Intracranial Abnormalities by Arteriography. C. H. Burge. —p. 137.
Postoperative Care of Major Eye Surgery. J. W. Jervey.—p. 139.
Studies with Iodine-Tagged Albumin in Cirrhotic Patients. M. P. Tyor and D. Cayer.—p. 141.
Curability of Carcinoma of Cervix in the Negro. M. Garcia.—p. 145.
Control of Trachoma. K. W. Cosgrove.—p. 152.
Salt Depletion Syndrome. H. L. Holley.—p. 153.
The Medical Student and Psychiatry. W. T. Brown and E. Kahn.—p. 161.

Use of Cutis in Orthopedic Operations.—Swart employs the term cutis to denote skin from which the epidermis and subcutaneous fat has been removed. After reviewing the literature on the use of this material for purposes where fascia is otherwise used, the author states that he used cutis in the construction of a new internal lateral ligament in 1943. Two small windows were made on the medial surface of the lower femur and two similar windows were made in the lateral surface of the medial tibial tuberosity. A piece of cutis was threaded in a figure of eight fashion through these holes and sutured to itself with cotton sutures. While there remained some laxity of the medial side of the knee, there was definite improvement. The author also performed a Henderson suspension operation for recurrent dislocation of the shoulder, using cutis instead of tendon, and since 1946 he has used cutis in six operations. The use of cutis to produce joint stability was successful. In two cases of radioulnar instability, stabilization was obtained by the use of cutis, but the patients complained of pain afterward. In one patient it was thought to be due to arthritis of the wrist joint, and in the other no cause was found. In two cases of acromioclavicular separation and one case of sternoclavicular separation the results have been good. The joints are stable and painless. As the cutis will shrink after removal, a piece 35% wider and slightly longer than is necessary should be removed. The most accessible donor site is the side of the thigh, although the abdomen may be used. Cutis is more easily available than fascia and it is stronger and will not tear in a transverse direction. The muscle hernias, likely to follow the removal of large pieces of fascia from the thigh, are avoided when cutis is used.

Postinjection Paralysis.—The problem of postinjection paralysis is becoming more important as many medications are now introduced intramuscularly. If care is not taken to avoid injections too near the nerves, paralysis may result from direct injury to a nerve or indirect injury by tissue reaction to the medication. After citing other reports on this problem, Wilson and Hillier review nine cases of paralysis following injections of tetanus antitoxin, penicillin, streptomycin, and vitamin B complex. Four case histories are presented of patients in whom the paralysis involved the arms and hands; these four included a case of radial paralysis with wrist drop following injection of tetanus antitoxin with complete recovery, and a severe case of radial nerve paralysis following injection of penicillin with incomplete recovery. In addition to the four cases involving the upper extremity, there were two cases in which one of the authors was called in consultation on account of paralysis of the sciatic nerve, which developed following the injection of streptomycin in the treatment of pulmonary tuberculosis. The authors also mention three cases of postinjection paralysis in the lower extremities, two following intramuscular injections of vitamin B complex, 300 mg. and one following injection of penicillin. In all three cases the injection was made into the gluteal region involving the sciatic nerve and all three received physical therapy with complete recovery. The over-all average of recovery time for eight cases was 4.21 months. One patient died of pulmonary tuberculosis before recovery of foot drop. Four of the cases had neurosurgical exploration and neurolysis. All cases had sensory nerve fiber involvement in addition to motor nerve fiber involvement. The onset of paralysis varied from immediately at the time of injection with the needle still in the muscle until eight days after injection of the medication. The physical therapy usually began with the use of a deep localized heat as produced by microwaves from a microtherm (radar) unit. Electrical stimulation using faradic and galvanic or sinusoidal currents was the second type of physical therapy used. Muscle reeducation was then used early until sufficient voluntary muscle power returned to finish up with resistive exercises using weights and pulleys. Assistive cock-up type splints for the wrist drop cases were used until muscle testing revealed partial or nearly complete return of muscle strength. For exercises at home the authors prefer a brick-shaped sponge rubber block to a rubber ball.

Southwestern Medicine, El Paso, Texas

33:37-76 (Feb.) 1952

Diagnosis and Treatment of Anemias. M. N. Wintrobe.—p. 55.
Intravenous Dialysis and Diathermy in Conservative Management of Nephritis. F. B. Faust.—p. 57.
"American Freedom Challenged by Socialism." G. Turner.—p. 63.

33:77-116 (March) 1952

Treatment of Endometrial Cancer. H. E. Schmitz and C. J. Smith.—p. 94.

Surgery, St. Louis

31:167-326 (Feb.) 1952

Bronchial Arteries: II. Their Role in Pulmonary Embolism and Infarction. F. H. Ellis Jr., J. H. Grindlay and J. E. Edwards.—p. 167.
Studies with Arteriovenous Fistulas: II. Influence of Posture upon Volume Flow. L. W. Freeman, H. B. Schumacker Jr., J. C. Finneran and L. R. Radigan.—p. 180.
*Use of Temporary Polythene Shunts to Permit Occlusion, Resection, and Frozen Homologous Graft Replacement of Vital Vessel Segments: Laboratory and Clinical Study. P. W. Schafer and C. A. Hardin. —p. 186.
New Injection Device for Angiography. L. D. Rosenman, F. L. Pearl and C. Calvert.—p. 200.
Double Aortic Arch. F. D. Dodrill.—p. 204.
*Air Embolism in Operations Done in Sitting Position: Report of Five Fatal Cases and One of Rescue by Simple Maneuver. W. B. Hamby and R. N. Terry.—p. 212.
Simultaneous Bilateral Radical Neck Dissection: Total Ablation of Both Internal and External Jugular Venous Systems at One Sitting. H. M. Morfit.—p. 216.
Effect of Surgery on Plasma Levels of Individual Essential Amino Acids. T. C. Everson and M. J. Fritschel.—p. 226.
Experimental and Clinical Observations on Intraventricular and Intracerebral Injection of Bacitracin. P. Teng and F. L. Meleney.—p. 233.
One-Stage Reconstruction of Cervical Esophagus or Trachea. M. T. Edgerton.—p. 239.
Esophageal Dysfunction in Rat After Vagotomy. D. E. Donald.—p. 251.
Effect of ACTH on Autogenous and Homologous Skin Grafts in Rabbits. B. C. Martin, T. W. Morgan and C. G. Lovingood.—p. 258.
Use of Therapeutic "Water Bed" in Surgical Lesions. R. Demel.—p. 263.
Biological Properties of Starch Sponge and Starch Sponge Powder. N. V. Ricchiuti.—p. 268.

Use of Temporary Polythene® Shunts.—Cross clamping, resection, and homologous graft replacement of the major part of the descending thoracic aorta were carried out in 24 dogs. Polythene® tubing was used in 11 animals for an artificial temporary arterial shunt so that the aorta could be safely occluded long enough to permit careful dissection and grafting. The shunts varied in internal diameter from 1.14 to 2.69 mm., depending on the size of the aorta. The aorta was obstructed for from 45 to 180 minutes. Of the nine surviving dogs, six were killed from 30 to 130 days postoperatively. Four of these animals presented grafts in excellent condition, while two had small mural thrombi. The remaining three animals were alive and well from 150 to 210 days after the operation, and by aortography were demonstrated to have grafts of normal caliber. These observations encouraged the authors to attempt frozen homologous artery transplantation in four patients, using temporary polythene shunts to maintain the circulation during the transplantation in three. One of these had an arteriosclerotic aneurysm of the abdominal aorta. The aorta was resected, using two polythene shunts, each 30 cm. long and 1.67 mm. in diameter, which were placed in the aorta at the level of the renal arteries. The duration of occlusion was 83 minutes. The patient had an uneventful early postoperative course, but died suddenly on the 29th postoperative day of massive intra-abdominal hemorrhage. The second patient had a syphilitic aneurysm of the distal ascending aorta extending into the right side of the arch. Four polythene shunts, each 20 cm. long, were placed in the aorta just distal to the aortic valve. Most of the ascending aorta, the entire arch, and the upper descending aorta were resected. The duration of occlusion was 150 minutes. Unexplained cardiac arrhythmia developed after placement of the shunts, continued after the operation, and the patient died one hour postoperatively. The third patient had arteriovenous aneurysm with large bore communication between the abdominal aorta and inferior vena cava, involving the wall of the abdominal aorta from a point 5 cm. distal to the renal arteries to within 1 cm. of the aortic bifurcation; a polythene shunt 15 cm. long and 2.15 mm. in diameter was inserted into the aorta above and below these points. The aneurysm was resected together with a 10 cm. segment of the aorta. This patient obtained an excellent result marred only by bleeding as the result of postoperative anticoagulant therapy. In both man and dog it appears feasible to maintain adequate circulation using polythene shunts during temporary occlusion of the aorta, thus permitting homologous graft replacement of resected aortic segments. Though not necessarily best for this purpose, frozen grafts appear to have yielded satisfactory results. This technique should be applicable to the management of a wide variety of diseases affecting vital vessels.

Air Embolism in Operations in Sitting Position.—Fatal air embolism developed during the course of neurosurgical operations performed on five patients in sitting position. Of the five patients four died abruptly in the course of cervical cordotomy or trigeminal rhizotomy, while one died shortly after he had been returned to his room following a vestibular rhizotomy. It was decided that the sitting position favored the development of the embolism through veins opened above the level of the heart. The advantages of sitting position for neurosurgery were so great that other methods were sought to prevent this complication without abandoning the position. Flooding the surgical field frequently with isotonic sodium chloride solution during the laminectomy, cauterizing the visible epidural veins, and waxing the raw bony edges appeared to offer the best solution. This method was used in a young woman who was operated on in sitting position for cervical intervertebral disk protrusion. Nevertheless, as the almost freed nerve root was being displaced, respiratory irregularity, fall in blood pressure, and imperceptible pulse were manifested abruptly. On auscultation the heart beat could not be heard. When the patient was shifted to the supine position the heart sound returned with a rapid, gurgling "mill-wheel" murmur. The patient was immediately shifted into the left lateral position, and the heart tones were reported normal. Blood pressure rose at once to 110 mm. of mercury and the pulse became full and regular. The operation was completed with the patient in prone position. In personal communications the authors have learned that two other victims of air embolism had been revived by this simple postural method of resuscitation.

U. S. Armed Forces Med. J., Washington, D. C.

3:171-340 (Feb.) 1952. **Partial Index**

Manual Artificial Respiration. D. B. Dill.—p. 171.
Chondromalacia of Patella. C. R. Carr and J. W. Howard.—p. 185.
Use of Cortisone and ACTH in Treating Reactions to Penicillin. N. M. Hensler, O. A. Wurl and J. O. Gillespie.—p. 199.
Observations on Essentially Normal Young Men Treated with ACTH and Cortisone: I. Effects on Glucose Metabolism. S. B. Appel and K. D. Orr.—p. 207.
*Chronic Granuloma Following Wound Contamination by Beryllium Silicate. O. G. Davies Jr.—p. 221.
Hemorrhage from Nasopharynx. E. L. Olson.—p. 239.
Psychiatric Consultation. W. J. Barker.—p. 243.
Multiple Laceration of Auricle. G. M. Cazan Jr.—p. 253.
Medical Service in Air Defense Command. A. J. Donneson.—p. 263.
Combined Streptomycin-Tuberculin Therapy in Pulmonary Tuberculosis: Methods of Treatment. E. C. Jacobs and J. R. Vivas.—p. 267.
Cyst of Pancreas Associated with Diabetes Mellitus. C. W. Norman. —p. 281.
Outbreak of Q Fever: I. Clinical Study. F. X. Fellers.—p. 287.
Chemical and Biologic Studies on DDT Resistance of Lice. H. C. Barnett and E. C. Knoblock.—p. 297.
Neuropathy Caused by Intramuscular Injection. D. J. LaFia.—p. 305.
Persistent Trismus During Ether Anesthesia. W. W. Montgomery.—p. 309.
Treatment of Congenital Megacolon. E. M. Aronstam.—p. 311.
Diabetic Lipemia Retinalis. R. P. Nadbath and L. Z. Fautneux Jr. —p. 319.
Incidence of Amebiasis in Korean Veterans. R. A. Radke.—p. 323.

Chronic Granuloma Produced by Beryllium Silicate.—In the case reported here a 20-year-old airman when first seen in November, 1950, had a tender, inflamed scar on the foot. Eleven years before he had cut his foot on a broken fluorescent lamp. This wound healed and remained asymptomatic for the ensuing eight years, and then he noticed progressive redness, thickening, and tenderness of the scar. This lesion was excised in November, 1950, but the postoperative scar remained tender, red, and indurated, and ulceration and crusting persisted in its center. In February, 1951, the patient was seen again and a presumptive diagnosis of "beryllium granuloma" was made despite the long latent period following the original injury. The area was again excised and microscopic examination of the tissue led to the diagnosis of chronic granuloma of the skin consistent with beryllium granuloma. In March, 1951, the area was again excised, this time with a full 1 cm. margin on all sides and extending to and including the deep fascia of the foot. Following this operation, the area healed and the resulting scar was normal in appearance.

FOREIGN

Acta Medica Scandinavica, Stockholm

141:231-308 (No. 4) 1952. **Partial Index**

Tubular Nephritis (Lower Nephron Nephrosis) and Its Treatment; Four Cases Following Acute Diarrhea. C. Brun.—p. 231.
Occurrence of Pernicious Anemia and Polycythemia in Same Patient. A. P. Skouby.—p. 244.
*Obstructive Jaundice with Negative Findings at Operation. M. Bjørneboe, P. Iversen and K. Trautner.—p. 249.
Hematuria, Hypoprothrombinemia and Salicylate Medication. P. Wising. —p. 256.

Obstructive Jaundice with Negative Findings at Laparotomy.—Obstructive jaundice is reported in two women and three men between the ages of 33 and 54 in whom biopsy of the liver revealed typical changes without inflammation. Explorative laparotomy did not disclose the cause of the biliary stasis. One patient died one week after the surgical intervention, and the postmortem examination did not reveal the cause of death or of the biliary stasis. Three patients were in good health four months, one year, and two years after the operation, and one patient was lost to observation. These five cases and similar ones cited from the literature presumably represent a group of diseases of the liver in which the bile flow is hindered by obstruction of unknown origin in the intrahepatic ducts. Since cholangiography was not carried out systematically, some cases may have been cases of unrecognized cholelithiasis with passage of stones.

Beiträge zur klinischen Chirurgie, Munich

182:257-384 (No. 3) 1951. **Partial Index**

Results of Surgical Treatment of Hallux Valgus. R. Wesche.—p. 257.
*Madlener's Operation and Its Results. H. Maurer.—p. 266.
Surgical Treatment of Benign and Malignant Diseases of Stomach, Duodenum and Jejunum with Clinical, Roentgenologic and Secretory Follow-Up Examinations. T.-O. Lindenschmidt.—p. 276.
*Hematologic Studies After Gastric Resections. H. Goldeck, I. Müller and D. Remy.—p. 294.
Pathology of the Cardia. F. Bordasch.—p. 304.
Surgical Treatment of Chronic Suppurating Osteomyelitis. U Ritter. —p. 314.
Indications for Nephrectomy. W. Geisthövel.—p. 347.

Madlener's Operation and Its Results.—The operation generally referred to as Madlener's was first described by Kelling in 1918, but Madlener was the first to use it in a large number of cases. The essential feature in this operation is that, in cases of gastric ulcer near the cardia, the ulcer itself is not interfered with and only the distal parts of the stomach are resected. Maurer feels that this operation should be carried out only in cases of ulcers near the cardia that are either not accessible for an arch-shaped resection, or in which such a resection is dangerous for the patient. In such cases, however, Madlener's operation is the method of choice. In 70 cases in which the operation was done in a period of 13½ years, the permanent results were excellent. Three patients died postoperatively. Three had an ulcer that during the operation gave the impression of possible malignancy and later proved to be malignant; in another case malignant degeneration seemed likely. Two patients with cardiospasm were not improved, and three other patients could not be traced. The other 55 patients, or more than three-fourths of the total, were completely relieved of all symptoms.

Hematological Studies After Gastric Resection.—Reports of impairment of hematopoiesis associated with gastric resection induced Goldeck and his co-workers to study this problem in 39 unselected patients. All of the patients had undergone gastric resection more than three years previously, usually in the form of a Billroth 2 procedure, with anterior gastroenterostomy and Braun's anastomosis. In studies of peripheral blood, special attention was given to the size of the erythrocytes, but none of the patients showed deviations exceeding the physiological scatter or characterizing the forms of anemia to be discussed. Studies on the bone marrow also did not reveal either indications of iron deficiency or signs of defective erythrocyte maturation such as is observed in macrocytic and megalocytic anemia. Studies on the iron content of the serum revealed no signs of sideropenia. The authors conclude from these observations that the gastric resection employed in these patients does not result in either symptomatic or pernicious anemia. However, on the basis of their own observations and in view of the complicated processes of iron metabolism, they believe that in rare cases there may be poor iron absorption and thus hypochromic anemia may develop, but factors in addition to the gastric resection would probably be involved in the pathogenesis.

British Journal of Dermatology, London

64:1-42 (Jan.) 1952

Observations on Effects of Anti-Histamine Drugs on Reactions of Skin Vessels to Carbaminoyl Choline. E. J. Moynahan.—p. 1.
The "L. E. Cell" and Its Significance. P. A. J. Smith.—p. 10.

British Journal of Experimental Pathology, London

32:471-576 (Dec.) 1951. **Partial Index**

Comparative Effect of Alpha-Tocopherol and Its Analogues on Massive Hepatic Necrosis in Rats on Protein Deficient Diet. G. Selzer, R. G. F. Parker, D. McKenzie and G. C. Linder.—p. 493.
Studies on Reproduction of Bacterial Viruses: I. Some Observations on Adsorption and Multiplication of Coliphages. D. E. Dolby and J. W. Czekalowski.—p. 498.
Studies on Agglutination of Red Cells by Clostridia I. Cl. Septique. E. N. Dafaalia and M. A. Soltys.—p. 510.
Histology of Tuberculin Reaction and Its Modification by Cortisone. P. G. H. Gell and I. T. Hinde.—p. 516.
Fibrinolytic Activity of Urine. J. R. B. Williams.—p. 530.
Presence of Thiol Groups in Thrombocytes and Their Significance in Contraction of Fibrin Gel. P. Fantl, L. Ebbels and J. F. Nelson. —p. 538.
Action of Acridine Compounds on Cell Division. R. J. O'Connor.—p. 547.
Antibody to Purified Virus Inhibitor. K. B. Fraser.—p. 552.

British Medical Journal, London

1:287-340 (Feb. 9) 1952

*Carcinoma of Stomach. B. F. Swynnerton and S. C. Truelove.—p. 287.
Survey of 17,301 Prescriptions on Form E.C.10. D. M. Dunlop, T. L. Henderson and R. S. Inch.—p. 292.
Case of Acute Beriberi Complicating Polyserositis in Britain. J. Thomson and K. R. Keay.—p. 295.
Granulomatous Ulcer of Nose Treated with Chloramphenicol. I. B. Sneddon and J. Colquhoun.—p. 298.
Purpura and Pancytopenia Complicating Arsenotherapy. M. G. Nelson. —p. 300.
Carcinoma of Adrenal Cortex with Endocrine Manifestations: Report of Case. R. J. Harrison and D. Abelson.—p. 303.
Islet-Cell Tumour of Pancreas. D. D. Webster and A. N. Blades.—p. 307.

Carcinoma of the Stomach.—Of 233 men and 142 women with carcinoma of the stomach who were treated between 1938 and 1949, 169 were admitted within six months after their first symptoms had appeared, while nearly one in five had had symptoms for more than two years. The commonest site of neoplasm was the prepyloric region and the least common the fundus. In more than four of every five patients the illness began with symptoms referable to the gastrointestinal tract, and the majority had some form of "indigestion." An epigastric mass was felt in about half the patients by the time of admission to hospital. A barium meal was the most accurate single diagnostic procedure. In 9 of 10 patients the radiologists reported a gastric abnormality at the first examination, and in more than 4 of 5 cases correctly interpreted the findings. Achlorhydria was a common finding, independent of the age of the patient or the site of the neoplasm. Normal or unusually acid secretions were observed in one of every four patients, so that such observations should not preclude a diagnosis of gastric carcinoma. Of 157 patients whose feces were examined for occult blood, 132 (84%) had large or moderate amounts. Laparotomy was carried out in 236 (63%) cases, and resection of the growth in 114 (30% of the total 375). An increased proportion in all age groups were treated by resection during the second half of the perio covered by the authors' study. Resection offers the only hop of prolonged life. Nearly a quarter of the resected group wer alive after five years, compared with less than 1% of the re mainder. Among the patients on whom resection was performe the outstanding factor influencing prognosis was the duratio of symptoms. Somewhat unexpectedly, the prognosis was ol served to improve with increasing length of history. The a distribution of the patients, the site of the lesion, and the poss bility that the neoplasm had arisen from a simple gastric ulc do not explain this finding; the conclusion is that it is due the occurrence of slow-growing carcinomas.

Edinburgh Medical Journal

58:565-618 (Dec.) 1951

Multiple Congenital Articular Rigidities: Review of Literature with Reports of Two Cases: Part I. T. James.—p. 565.
Id.: Part II. T. James.—p. 581.
Hypopituitarism Masquerading as Myxoedema (Pituitary Myxoedema). J. A. Strong.—p. 598.

Gynaecologia, Basel

133:1-64 (Jan.) 1952. **Partial Index**

*Treatment of Post-Menopausal Osteoporosis with Estrone Micro-Crystal Precipitates. Z. Polishuk and E. M. Kleinhause.—p. 1.
Influence of Androgenic Hormone on Vaginal Smear in Women. T. Cohen-Fraenkel.—p. 11.
Registration and Amplification of Fetal Heart Sound by Loud Speaker Stethoscope. A. H. Palmrich.—p. 29.
Histochemical Investigations of Incretory Activity of Hypophysis and Placenta. K. Páli and L. Lajos.—p. 37.

Treatment of Postmenopausal Osteoporosis.—According to Polishuk and Kleinhause, the following characterize postmenopausal osteoporosis: generalized osteoporosis affecting particularly the spine; normal blood levels of calcium, phosphorus, and phosphatase; absence of any other systemic disorders or malnutrition; and menopause. The authors present three of a series of six women with postmenopausal osteoporosis who were treated with estrogenic hormones in the form of estrone-microcrystal precipitates, which were later supplemented with diethylstilbestrol. This treatment proved most effective. Pain was relieved and freedom of movements as well as increased feeling of well-being was obtained about 14 days after treatment was begun. Roentgenologic evidence of increased bone density was evident about the eighth week. The beneficial effects of estrone persisted for about three months after interruption of treatment.

Journal of Laryngology and Otology, London

66:55-110 (Feb.) 1952

Genesis of Otosclerosis. C. O. Nylén and B. Nylén.—p. 55.
Otosclerosis: Closed Method of Fenestration. P. Garson.—p. 65.
Treatment of Brain Abscess. P. H. Wood.—p. 71.
Investigation into Relationship Between Adenoids and Sinusitis in Children. P. H. Huggill and J. C. Ballantyne.—p. 84.

Lancet, London

1:325-376 (Feb. 16) 1952

Endocrine Control of Blood-Sugar. C. N. H. Long.—p. 325.
Simple Method of Internal Tocography. E. A. Williams and J. A. Stallworthy.—p. 330.
Neonatal Surgery: Early Treatment of Congenital Malformations. P. P. Rickham.—p. 332.
Infective Hepatitis in a Boarding-School. H. S. Brodribb.—p. 339.
*Hypothermic and Antipyretic Effect of Preparations of A.C.T.H. W. W. Douglas and W. D. M. Paton.—p. 342.
Effect of Procaine Penicillin and Breathing Exercises in Postoperative Pulmonary Complications. K. N. V. Palmer and B. A. Sellick.—p. 345.
Case of Scleroderma: Failure to Respond to Recent Drugs. J. N. Briggs and R. S. Illingworth.—p. 346.
Terramycin in Prophylaxis of Ophthalmia Neonatorum. D. O'Brien.—p. 347.

Hypothermic and Antipyretic Effect of Corticotropin.—A common effect of corticotropin (ACTH) in febrile conditions is to lower the body temperature. This is usually attributed to a modification of the disease through the release of adrenal cortical hormones. Experiments described here, however, reveal that preparations of corticotropin cause a fall in the rectal temperature of normal (unanesthetized) rabbits. The fall in temperature is about 1 C with a dose of 1 unit per kilogram of body weight, reaches its lowest point in one to two hours, and passes off in about three hours. Corticotropin preparations, given simultaneously with a pyrogen, delay and reduce the pyrexial response to the pyrogen. Given after pyrexia has been established, corticotropin preparations temporarily lower the temperature to normal or below. The hypothermic and antipyretic actions of corticotropin preparations were displayed by all samples tested, and were not due to contamination with posterior pituitary hormone. The importance of these observations for the testing for freedom from pyrogens is obvious. The usual pyrogen test ends three hours after the test material has been injected. The ability of corticotropin to delay the appearance of a pyrogenic response means that a longer test period, preferably five hours, must be used. The difficulties of interpreting the results of a test in which what is essentially a mixture of drugs of opposing actions is injected are obvious. This hypothermic and antipyrexial action of corticotropin suggests that the pituitary may, under some conditions, play some part in the normal physiology of temperature regulation. In addition, the effects on body temperature are displayed by doses comparable to those used clinically in man, and the possibility arises that the extensive metabolic or vascular readjustments involved in bringing about such considerable falls in temperature, or the fall in temperature itself, may be of therapeutic importance. Thus the effects of corticotropin in a given disease might in part be due not to a specific action on the disease but rather to vascular or metabolic changes.

Medical Journal of Australia, Sydney

1:97-132 (Jan. 26) 1952

*Murray Valley Encephalitis: Epidemiological Aspects. S. G. Anderson.—p. 97.
*Id.: Isolation and Characterization of Aetiological Agent. E. L. French.—p. 100.
*Id.: Clinical Aspects. E. G. Robertson.—p. 103.
Id.: Pathological Aspects. E. G. Robertson.—p. 107.
Id.: Surveys of Human and Animal Sera. S. G. Anderson, M. Donnelley, W. J. Stevenson and others.—p. 110.

Murray Valley Encephalitis: Epidemiologic Aspects. — This paper serves as an introduction to several papers on Murray Valley encephalitis, an outbreak of which occurred during the first three months of 1951 in the Murray Valley in Northern Victoria. There were 40 recognized cases and 17 deaths. The morbidity was greater in children than in adults, and greater in males than in females. The incubation period was about one to three weeks, but varied between cases. Clinically and epidemiologically the 1951 outbreak closely resembled the Australian "X" disease, which was prevalent in 1917 and 1918.

Isolation of Etiologic Agent of Murray Valley Encephalitis.—Virus was isolated from the brains of three patients with Murray Valley encephalitis. The virus was more readily isolated on the chorioallantoic membrane of developing chick embryos than by inoculation into mice. A simple method of preparing complement-fixing antigen from infected chorioallantoic membranes is described. The virus is serologically related to, but not identical with, the virus of Japanese encephalitis B, and resembles this virus in its host range and other laboratory characteristics.

Clinical Aspects of Murray Valley Encephalitis.—This paper describes the clinical aspects of Murray Valley encephalitis as observed in 4 babies, of whom 2 died, 9 children, of whom 2 died, and 13 adults, of whom 4 died. In general the illness began abruptly with malaise, anorexia, headache, fever, lethargy and drowsiness with irritability, vomiting, giddiness and, especially in younger patients, convulsions. Subsequently cerebration and consciousness became progressively impaired. In adults this development was often gradual; in children a rapid progression was commoner. Cervical rigidity was constant, and the number of cells in the cerebrospinal fluid was moderately increased. Improvement might commence at any stage, and, if it began early, recovery was rapid and complete. More frequently the disease progressed, with the appearance of involuntary movements of various types, deep unconsciousness, upper and lower motor neuron paresis, inability to swallow, and respiratory dysrhythmia. A number of the patients who developed this severe condition survived, some with considerable impairment of cerebral function. Since the manifestations varied somewhat in infants, children, and adults, the clinical aspects in each group are described separately. The symptoms and signs found at all ages were typical of an acute viral encephalitis, and did not allow the disease to be clinically distinguished from the other viral encephalitides such as Japanese B encephalitis, St. Louis encephalitis, and human infections with Western and Eastern equine encephalomyelitis, nor from the Australian X disease reported in 1917 and 1918.

Medizinische Monatsschrift, Stuttgart

6:73-136 (Feb.) 1952. **Partial Index**

Clinical Manifestations of Excessive Fatigue. M. Stammberger and J. Gasch.—p. 96.

Irregular Antibodies and Blood Transfusions. G. Elsässer.—p. 99.

*Treatment of Spastic Conditions and Ataxia in Multiple Sclerosis, with Temporary Interruption of the Sympathetic Nervous Pathways. M. Sommer.—p. 101.

*Treatment of Endocarditis with Antibiotic Substances, with Particular Consideration of Aureomycin. A. Drassdo.—p. 107.

Treatment of Spastic Conditions and Ataxia in Multiple Sclerosis.—Bilateral infiltration of the lumbar portion of the sympathetic nerves at the level of the first and second lumbar ganglion with "myomelcain" (a modified procaine hydrochloride preparation) was carried out in 10 patients with advanced multiple sclerosis of many years' duration who had severe spastic-atactic paresis of the lower extremities. Considerable subjective and objective improvement was obtained by all the patients after 10 infiltrations. The sympathetic nervous system exerts a regulatory effect, particularly on the peripheral sensory neuron, so that the tonus of the striated muscles may also be benefited by a temporary interruption of the sympathetic nervous pathways. In the author's patients the sympathetic block not only reduced the increased muscle tonus, but also exerted a favorable effect on the ataxia. The conclusion, therefore, seems to be justified that the sympathetic nerves not only regulate the tension in striated muscles but also to some extent the quality of he deep sensivity, so that the entire spinal sensory neuron may be considered as subordinated to the sympathetic nerves. The relief of spasticity that resulted from the sympathetic block facilitated the subsequent treatment and enhanced its effect. The sympathetic block produced euphoria in several patients. This psychic effect was interpreted as a break-through of the higher autonomic reflex arcs by some effect on the hypothalamic-diencephalic centers.

Antibiotic Treatment of Endocarditis.—Of 11 patients with endocarditis, bacteriological culture of the blood was positive in 3, pharyngeal smears were positive for Streptococcus viridans in 2, hemolytic staphylococci and streptococci were detected in the fluid obtained from the tonsils by pressure in 1, hemolytic streptococci in the sputum of 1, enterococci in the bile of 1, and hemolytic staphylococci in urine obtained by catheterization in 2. Pathogenic agents could not be demonstrated in three patients. One patient died from circulatory failure before treatment had been instituted. Of the remaining 10 patients, 2 were treated only with sulfonamides because penicillin was not available, 6 were treated with penicillin in total doses of from 3,000,000 to 32,000,000, and 2 were treated with penicillin and aureomycin. The latter antibiotic was given in daily doses of 1 to 2 gm., with total doses of 30 and 10 gm., respectively. Of the 10 patients, 6 were considered as cured after a follow-up of from five months to two years, 1 was improved but had a recurrence, and 3 died from circulatory failure. Aureomycin did not prevent a recurrence in one of the two patients treated with this antibiotic. Aureomycin, therefore, does not seem to be superior to the other antibiotics used in treatment of endocarditis, possibly because in endocarditis the cardiac valves are partly covered with necrotic masses and partly with massive thrombi. Icterus occurred in one of the patients after cessation of treatment with aureomycin. As a manifestation of a temporary impairment of the liver parenchyma, icterus might be considered a reversible untoward reaction to aureomycin.

Münchener medizinische Wochenschrift, Munich

94:194-240 (Feb. 1) 1952. **Partial Index**

*Clinical Aspects of Toxoplasmosis in Adults. E. Wollheim.—p. 194.

Cutaneous Diphtheria on Milk Eczema Lesions. H. Lausecker.—p. 202.

Early Diagnosis of Abscess in Douglas' Pouch. H. Sturm.—p. 203.

The Dispute About Strophoral (Oral Strophanthin Preparation). L. Heilmeyer.—p. 207.

Clinical Aspects of Toxoplasmosis in Adults.—During an epidemic of poliomyelitis Wollheim observed patients who had such unusual symptoms as positive Babinski reflexes, swelling of lymph nodes, and enlargement of the spleen. The assistant assigned to investigate these symptoms was interested in toxoplasmosis and made Sabin-Feldman tests on some of these patients and found unusually high titers. Reluctant to base the diagnosis of toxoplasmosis only on the outcome of this test, the cerebrospinal fluids were examined for Toxoplasma parasites and they were found in 14 of the patients. The clinical aspects of toxoplasmosis are described on the basis of observations on 44 patients. The most important clinical forms of the disease are those with central nervous and enterocolitic manifestations. Other manifestations are skin lesions, pulmonary symptoms, and multiple eye symptoms. A constantly increasing titer of the Sabin-Feldman test in the course of the disease is further proof for the diagnosis of toxoplasmosis. Since penicillin, streptomycin, and aureomycin as well as an antimony preparation proved largely ineffective, sulfonamides in high doses seem the most effective therapeutic agents in toxoplasmosis.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

96:1-68 (Jan. 5) 1952. **Partial Index**

Frequency of Pulmonary Tuberculosis in Young Men Doing Administrative Work. I. van der Heijden.—p. 4.

*Hodgkin's Disease and Aversion to Alcohol: A Little Known Sign of Hodgkin's Disease. B. Verbeeten.—p. 12.

Value of Systematic Bronchoscopic Control of Stump of Bronchus After Resection for Pulmonary Tuberculosis. R. Spanjaard and H. Navis.—p. 15.

Hodgkin's Disease and Aversion to Alcohol.—Verbeeten states that during the initial stage of Hodgkin's disease symptoms such as pain, coughing and itching become intensified after even small quantities of alcoholic beverages are taken. Because of this, the patients may develop an extreme aversion to alcohol. Case histories are presented to illustrate this. The author suggests that this observation may prove of value not only in the early diagnosis of Hodgkin's disease, but also in localization of lesions and possibly in evaluation of therapeutic methods.

Philippine Medical Association Journal, Manila

27:733-784 (Dec.) 1951

Role of Fungi in Allergy. F. C. Bocobo.—p. 733.

Fibrositis Erroneously Diagnosed as Appendicitis. R. V. Guiang.—p. 739.

Plastic Surgery in Otolaryngology. M. G. Tan.—p. 745.

Schistosomiasis Research: Observation. R. Ramas.—p. 751.

Practitioner, London

168:109-210 (Feb.) 1952

Malignant Disease of Mouth. R. L. Holt and E. C. Easson.—p. 113.

Chronic Infections of Jaws in General Practice. S. H. Wass.—p. 121.

Gingivitis. J. Naish.—p. 127.

Oral Manifestations of Deficiency Diseases. H. Sinclair.—p. 133.

Oral Manifestations of Syphilis. G. Horne.—p. 140.

Problem of Dental Caries. E. Matthews.—p. 147.

Bacteriology of Mouth. A. C. Cunliffe.—p. 157.

Infective Factor in Asthma. T. E. Gumpert.—p. 162.

Prensa Médica Argentina, Buenos Aires

38:3383-3438 (Dec. 28) 1951. **Partial Index**

*Hydatidosis of the Nervous System. R. Carrillo, R. F. Matera, and T. Insausti.—p. 3383.

*Generalized Tuberculous Lymphadenitis. R. Dassen, E. G. Fongi and E. F. Gauna.—p. 3389.

Cortisone Treatment of Histomonocytic Reticulosis. A. L. Maggi, D. Hojman and E. Rosemblit.—p. 3400.

Narcoanalysis in Hysterical Amaurosis. L. Grinberg.—p. 3411.

Hydatidosis of the Nervous System.—The syndrome of endocranial hypertension with edema of the optic papillae, vomiting, and headache was presented by nine patients from 7 to 49 years old who had cerebral hydatidosis. Neurological signs were found in all cases. Ophthalmological examination showed changes in the visual field in addition to papillary edema. Diastasis of the sutures, osteoporosis of the cranium, deformation at the site of the cyst, and rarefaction of the anatomical components of the sella turcica are the principal radiological signs; they occur most frequently in children. Laboratory tests were inconclusive; the Ghedini reaction was positive in four cases, but none of the recognized tests proved absolutely reliable. The cerebrospinal fluid was normal. Encephalography and ventriculography plainly showed the site of the lesion; large neoplasms and serious displacements in the ventricular system could be seen in the ventriculographic films. Seven of the nine patients were operated on successfully; four were cured, and the other three have been lost to follow-up. There were two postoperative deaths; one from cerebral coma caused by hernia of the temporal lobe prior to operation and the other from bronchopneumonia 10 days after operation. Spinal hydatidosis in four adult patients was accompanied by symptoms of radiculomedullary compression. The course is slow, but in spite of its chronicity the prognosis in this condition is grave. Dissemination apparently takes place through innumerable hydatid vesicles, resembling grains of tapioca, which invade the epidural space and surround the dural column. Cure can only be brought about by some form of biological treatment that will arrest the multiplication of these vesicles.

Generalized Tuberculous Lymphadenitis.—Tuberculous lymphadenitis closely resembles Hodgkin's disease clinically. Differentiation requires biopsy of the lymph nodes and inoculation in guinea pigs. The course of the disease is variable, ranging from 4 months to 18 years or more. Painless swelling of the lymph nodes is the earliest symptom; the general condition is not affected at first, but weakness, fever, night sweats, and loss of weight and appetite gradually appear. Death usually results from generalized miliary tuberculosis. The authors' case, that of a fifteen-year-old girl, is the 29th so far reported. She had a history of painless swellings in the neck and axillas, accompanied by weakness and loss of weight. Biopsy of the cervical lymph nodes showed tubercle bacilli of the bovine type. Nausea, vomiting, abdominal pain, and diarrhea suggested the presence of an intestinal tubercular lesion through which the infection may have gained entry. The patient lived in a rural area and drank a great deal of milk. Treatment with streptomycin was not effective because, although her general condition improved, she continued to have a high fever (39 C) and the sedimentation rate ranged from 48 to 81 mm. per hour. Amithiozone ("TB_1") was administered, and fever disappeared within a few days; abdominal symptoms were relieved, and the sedimentation rate declined. The initial dose was 12.5 mg., and was gradually increased to four 50 mg. tablets daily, two in the morning and two in the afternoon. During this treatment cheese, butter, and fish were forbidden, as well as medications containing acetylsalicylic acid (aspirin) or aminopyrine (pyramidon®); ultraviolet and roentgen rays must not be used. The patient felt remarkably well by the time she had had 15 gm. of amithiozone; she had gained 15 kg. The blood picture was nearly normal, and the swellings were steadily diminishing in size. X-ray treatment was begun 15 days after the maximum total dose of amithiozone (30.1625 gm.) had been given, and resulted in further reduction of the swellings and return of the blood picture to normal, only the sedimentation rate remaining slightly elevated. Amithiozone® and radiotherapy, with a hygienic diet and such tonic medications as liver extract, vitamins, and minerals, seems to be the *treatment of* choice for generalized tuberculous lymphadenitis.

Presse Médicale, Paris

60:81-112 (Jan. 23) 1952. Partial Index

Diagnosis of Gliomas by Electroencephalograms Combined with Angiography. M. David, *H. Fischgold, G.-C. Lairy-Bounes* and J. Talairach.—p. 81.
Diagnosis of Bone Metastases of Cancer of the Prostate and of Fibrous Osteitis. J. A. Lièvre.—p. 85.
*Results of 510 Adrenal Medullectomies in Patients with Medullar Hyperadrenalism. L. Durante.—p. 102.

Medullectomy in Medullar Hyperadrenalism.—Of 510 medullectomies performed during the last 15 years on patients with medullar *hyperadrenalism*, 38 were bilateral. Highly satisfactory results were obtained in 69 patients with essential hypertension, in 3 with malignant hypertension, in 102 with Raynaud's disease, in 235 with endoarteritis obliterans, and in 7 with scleroderma. There was not a single operative death. The extraperitoneal lumbar approach with or without resection of the 12th rib proved to be simpler, more rapid, and less traumatizing than laparotomy. Medullectomy causes almost no significant physiological damage, since sufficient chromaffin tissue remains in the aberrant paraganglions and the chromaffin bodies of the sympathetic plexuses. Medullectomy is a selective intervention, and 90% of the adrenal gland is not removed. At present medullectomy is the most effective surgical treatment of medullar hyperadrenalism. A complete clinical recovery was obtained in the great majority of cases in which ganglionectomy, splanchnicectomy, and periarterial surgical intervention failed or were followed by recurrences. Medullectomy should not be considered as a miracle treatment by which permanent canalization could be obtained of an artery that has become obstructed by a subintimal proliferative process. Medullectomy, however, more than any other surgical procedure that influences peripheral nerve function, may prevent obliteration of the collateral circulation in any vascular area of the body. The impressive remissions obtained within three to four months in advanced cases of scleroderma associated with severe sclerodactylia demonstrated that medullectomy not only exerts a favorable effect on the vascular network, but also on the connective and mesenchymal stroma that supports the tissues and organs, thus opening a wide field for therapeutic trials with this type of surgical intervention.

60:113-132 (Jan. 26) 1952

Ultrasonic Therapy in Otorhinolaryngology. G. Portmann, M. Portmann and L. J. Barbe.—p. 113.
*Anticoagulant Therapy for Emboli due to Mitral Stenosis. J. Facquet, A. Husson and H. Ducrot.—p. 116.
Administration of Corticotropin (ACTH) in Continued Venous Perfusion. M. Linquette, M. Goudemand, P. Pruvot and A. Lorrain.—p. 117.

Anticoagulant Therapy for Emboli Due to Mitral Stenosis.—Long-continued anticoagulant therapy with ethyl biscoumacetate (tromexan®) was given to three patients with mitral stenosis. Treatment was started with doses of 900 mg. for the first three days. Smaller doses then were administered every day in two or three divided doses to maintain the prothrombin level between 30%, where definite hypocoagulability of the blood may become manifest, and 10%, below which the risk of hemorrhage becomes imminent. The maintenance dose of ethyl biscoumacetate varied considerably; by maintaining the prothrombin level within effective and safe limits a satisfactory hypocoagulability was obtained with 300 mg., 225 mg., and 75 mg., respectively. In the first patient, a woman aged 51 who had had mitral stenosis since the age of 24, three embolic episodes occurred during the three years preceding the institution of anticoagulant therapy. Treatment with ethyl biscoumacetate was continued for two and a half years, and not a single embolus recurred during this period. The two other patients were treated with ethyl biscoumacetate for 18 months and one year, respectively, without any recurrent embolic episode. The authors stress the necessity of controlling the effect of the anticoagulant treatment, not only by determination of the prothrombin level but also by the in vitro heparin tolerance test. The coagulability may be almost unchanged despite a prothrombin level below 30%, and in such a case the dose of the anticoagulant may be increased. On the contrary, a satisfactory hypocoagulability may be observed with a prothrombin level above 30%, and reduction of the dose then appears to be justified. According to the in vitro heparin tolerance test, the coagulation time of the heparinized plasma should become double its normal value during anticoagulant treatment for satisfactory hypocoagulability.

Revista Española de Pediatria, Zaragoza

7:753-916 (Nov.-Dec.) 1951

Allergies in Pediatrics. C. Salazar de Sousa.—p. 753.
*Water-Hypophysin Test for Renal Function Exploration in Children. J. Campistol Vila.—p. 775.
Familial Myoclonia. M. Royo Montañés.—p. 791.
Visceral Mycoses in Children. A. E. Moya de Larramendi.—p. 803.

Study of Renal Function in Children: New Technique.—Water and hypophysin may be used together for rapid simultaneous testing of renal concentration and dilution. Application of the test is simple: while the patient is fasting and at rest in bed, he is given a mixture of equal parts of milk and water (milk facilitates the test for children *without altering* the result), amounting to 3% of his weight, within one half hour, and immediately thereafter he is given 1 I.U. of posterior pituitary extract intramuscularly. The bladder is emptied before the test, and measurements are made of the quantity and specific gravity of the urine eliminated every half hour for the first three hours, and hourly for the next two to four hours. The normal kidney responds with small amounts of urine of maximum concentration for from two to three hours (antidiuretic phase); this is followed abruptly by discharge of large quantities of urine with very low specific gravity, sometimes under 1.001 (diuretic phase), for about two hours, during which at least three-fourths of the liquid given will have been eliminated. The concentration then begins to increase and the test is considered complete, because the maximum concentration of which the kidney is capable and the rapidity with which it eliminates water upon cessation of the antidiuretic phase have been ascertained. Response varies in different forms of kidney disease, facilitating diagnosis. The prognosis may be indicated by variations in response at different stages of disease. This combined test has special advantages in pediatrics: it can be carried out in a single morning (five or six hours) without interference between the two phases; it requires very little change in the child's diet, the liquid taken serving as a light breakfast and regular meals being resumed at noon; it eliminates the dietary inconveniences of tests requiring suppression of liquids and the eating of dry, salty foods distasteful to children and possibly injurious to the kidneys. Contraindications are conditions such as hypertension and cardiac insufficiency. Instability of water metabolism in children under 3 years of age makes the combined test unsuitable for them.

Schweizerische medizinische Wochenschrift, Basel

82:73-96 (Jan. 26) 1952. Partial Index

*Serum Iron in Differential Diagnosis of Jaundice. P. Dubs.—p. 73.
Symptomatology and Therapy of Stenosis of Aortic Isthmus. E. Attinger.—p. 78.
Glandular Cystic Hyperplasia and Carcinoma of Corpus Uteri. E. Gruber and J. R. Rüttner.—p. 85.
*Goiter in Childhood as Result of Deficient Nutrition. E. St. Loup B.—p. 88.

Iron Content of Serum in Differential Diagnosis of Jaundice.—Investigations on the relation between iron metabolism and hepatic function indicated that the iron content of the serum differs in obstructive jaundice and in hepatitis. The increased serum iron content in hepatitis and the normal or subnormal values in obstructive jaundice are so consistent that the determination of the iron content of the serum deserves preference among the methods available for differentiation of these disorders.

Goiter in Children as Result of Deficient Nutrition.—The form of goiter with which the author is concerned has been largely disregarded, or has been considered as an almost normal form of developmental hyperplasia, but some have ascribed it to iodine deficiency. It is observed only in children and adolescents, in girls more frequently than in boys. The main symptom, and sometimes the only one, is an increase in the size of the thyroid. The author differentiates three types of thyroidal enlargement in these children: in the first type the enlargement is only palpable; in the second enlargement is visible; and in the third it has a goiter form. Cases of short duration show no other symptoms, whereas in those in whom the thyroid enlargement has existed for more than a year, the pulse rate may be accelerated, or, more rarely, it may be slower and in a few cases changeable. Exophthalmos and tremor were always absent. Some of the children were nervous and irritable and had moist hands and other vasomotor phenomena; others showed signs of physical and mental retardation, with dry and rough skin, dull and dry hair, and brittle nails, but by far the majority had only enlargement of the thyroid. The author observed this disorder chiefly in orphanages. In one group of 140 orphans he detected 51% with goiter, and in another group of 104 thyroid enlargement existed in 32%. In both of these institutions the nutrition was extremely deficient; neither meat, eggs, nor butter was served in the first of the two and the small amount of milk available was given mostly to the bottle babies. In schools that included children of families in which the nutrition was better, only slightly more than 7% of the children had enlarged thyroids. The salt and water ingested was the same in all groups. Improved nutrition and the addition of large doses of vitamin A (with their regulating effect on thyroxin) counteracted the thyroid hyperplasia. This fact, and the observation that this type of goiter is frequent in countries where malnutrition is prevalent, and almost absent where nutrition is good is regarded as further proof that this form of goiter is the result of nutritional deficiencies. That this type of goiter is most frequent at the onset of puberty is ascribed to the fact that at this time the vitamin requirements are particularly great. The author suggests that this type of goiter may lead to hyperthyroidism, either because the causes persist or unsuitable drugs are given.

Semaine des Hôpitaux de Paris

28:165-202 (Jan. 18) 1952. Partial Index

*Treatment of Lumbago-Sciatica by Means of "Embedded Grafts." J. Debeyre, S. de Sèze and S. H. Jurmand.—p. 165.
*Total Patellectomy in Arthritis of the Knee. J. Debeyre and J. Levernieux.—p. 170.
Surgical Treatment of "Bicipital Syndrome," Clinical Form of Scapulohumeral Periarthritis. J. Debeyre and A. Denis.—p. 175.

Surgical Treatment of Lumbago-Sciatica.—Debeyre and coworkers describe a technique of lumbosacral arthrodesis that was used in 150 patients with lumbago, with or without radiating sciatica. The posterior surfaces of the laminas of the fourth and fifth lumbar vertebrae and the upper portion of the posterior surface of the sacrum were denuded; a thick layer of spongy bone chips was placed over the denuded surfaces, and then the entire area was covered with a bone flap removed from the ilium and embedded between the spinous processes of the vertebrae, fixation of which had been attempted. A large, thick, continuous bone block was thus obtained, which united with the posterior arches of the vertebrae and formed a powerful splint. Of 44 patients who had been followed for at least one year after the operation, 31 were completely free from pain, 9 were considerably improved, and only 4 were therapeutic failures. After the intervention six patients had pain that differed from that before the intervention; it was localized below the graft and was to be considered compensatory in the area of the spinal fusion. It subsided completely in five patients. Twenty-nine patients resumed their work, office workers within two months and manual laborers within five and seven months. Surgical treatment of patients with backache should be attempted when all methods of conservative treatment have failed. Lumbosacral arthrodesis by iliac graft is the method of choice. It may be easily preceded by an exploration of the disks, and usually it does not require immobilization in bed for longer than one month. It is a perfect substitute for Albee's grafting, from which only disappointing results may be obtained in the lumbosacral region. The authors' technique, which is similar to that of Bosworth, is easier than Wilson's method, which had been advocated recently.

Patellectomy in Traumatic Arthrosis of the Knee.—Of 20 patients operated on for traumatic arthrosis of the knee, 6 subjected to total patellectomy were followed more than a year. Four obtained good results with complete relief of pain; articular function was hardly limited, there was complete extension, and flexion exceeded the right angle. The patients were able to resume their normal activities within six months after the intervention. The remaining two patients were improved, one still having pain on walking but able to walk several miles, while the other had subpatellar pain on effort that prevented his resuming hard work. Results showed that the patella is not an indispensable part of the knee joint. Patellectomy deserves to be considered as one of the best methods of treatment for arthrosis of the knee. It is particularly indicated in cases of isolated femoropatellar arthrosis without involvement of the femorotibial joint. When the patella is surrounded by osteophytes and when the subtrochlear cavity is filled up, the permanent posture of the knee in slight flexion causes disturbance of gait. This disturbance may subside following patellectomy, which eliminates the bony projections and shortens the extensor apparatus. Consequently patellectomy may be attempted in cases of extensive arthrosis in the absence of articular dislocation and considerable deformity of the articular surfaces. Patellectomy is a simple operation that may be performed easily and without risk, resulting in complete relief from pain and preservation of mobility of the joint; it even seems to prevent progression of the arthrosis.

South African Medical Journal, Cape Town

26:1-24 (Jan. 5) 1952

Congenital Syphilis: Short Case Notes with Radiological Illustrations. I. Kessel.—p. 1.
Localization of Ingested Foreign Body in Abdomen. J. N. Jacobson. —p. 5.
Strain-Gauge Manometer: Preliminary Note on Its Construction. C. S. Jones and K. A. W. Paterson.—p. 7.
Asthma and Dermatitis Caused by Chloroplatinic Acid. J. Marshall. —p. 8.
*Hypotensive Anaesthesia in Plastic Surgery. J. Penn and H. Bentel.—p. 9.

Hypotensive Anesthesia in Plastic Surgery.—Of 100 patients receiving plastic surgical treatment under anesthesia with concomitant hexamethonium bromide, 86 obtained good to excellent results. In 11 hemostasis was fair. In three operative bleeding was not influenced. The usual dose of hexamethonium was 50 mg. for young healthy adults, 30 to 40 mg. for patients over 40, and 20 to 30 mg. for patients over 50 and those who had a mild hypertension or whose blood pressure fell due to posture alone. Hypotensive anesthesia with hexamethonium bromide reduced the amount of anesthetic used. Surgical shock was not a feature, and postoperative sickness was minimized. Venous thrombosis, cerebral anemia, intestinal ileus, renal breakdown, or any other complications that may be attributed to autonomic paralysis or very low blood pressure were not observed. The authors feel that these complications can be avoided by correct selection of cases, careful blood pressure readings throughout, full oxygenation, avoidance of prolonged operations, and adequate after-treatment. The reduction in bleeding resulting from the lower systolic blood pressure improves surgical accuracy, lessens trauma and chances of suture material being buried, shortens operation time and reduces postoperative edema and bruising to a minimum. The extent of tumor, disease, or scar to be removed and the skin flap viability can be assessed more accurately. Hexamethonium bromide should be used only by skilled anesthetists. Teamwork between anesthetist, surgeon, and nursing staff is essential, as is good postoperative care.

Trans. Royal Soc. Trop. Med. and Hyg., London

46:1-112 (Jan.) 1952. **Partial Index**

*Further Studies on Susceptibility of African Wild Animals to Yellow Fever. G. W. A. Dick.—p. 47.
Two Cases of Sickle-Cell Anaemia Associated with Retinal Microaneurysms. G. M. Edington and J. W. R. Sarkies.—p. 59.
Peculiar Scars of Upper Eyelids: New Type of Disease in China. A. Fuchs.—p. 63.
Chloramphenicol (Chloromycetin) in Treatment of Experimental Relapsing Fever. R. B. Heisch and A. E. C. Harvey.—p. 65.
Aureomycin in Treatment of Framboesia. K. R. Hill, K. Rhodes and G. S. Escoffery.—p. 71.
Treatment of Schistosomiasis. B. Girgis and A. Magid.—p. 81.

Susceptibility of African Wild Animals to Yellow Fever.—The epidemiology of jungle yellow fever may be satisfactorily explained by the primate mosquito cycle, in which the mosquito is the principal vector and host of the virus. However, other cycles of infection may maintain the virus under climatic conditions unfavorable to the persistence of the mosquito reservoir throughout a long dry season. Previous studies on the susceptibility of various species of African wild animals to yellow fever virus have been concerned mainly with the susceptibility of primates, but included some work on seven species of rodents, a bush pig, a hyrax, and a leopard. This paper reports some additional work that has been done on wild mammals other than primates. It was confirmed that hedgehogs are highly susceptible to inoculations of yellow fever virus. The other insectivores studied, the shrews, were found to be resistant to inoculations of viscerotropic virus. Of all the other animals tested, only in genets did the virus circulate in a quantity that it is believed might infect an arthropod vector. Some palm civets that developed antibodies after inoculation lost all demonstrable antibody after various intervals. Thus, with the exception of primates, hedgehogs and genets (of which the latter require further study), there is no evidence that any of the African mammals so far tested are susceptible enough to yellow fever virus to make it likely that they enter into any cycle of sylvan yellow fever.

Tubercle, London

33:33-64 (Feb.) 1952

Rehabilitation and Resettlement. J. E. Geddes.—p. 34.
Primary Tuberculous Conjunctival Ulcer. K. Plucinski.—p. 40.
Individual Miniature Radiography. O. Clarke.—p. 42.
Employment of Tuberculous Workers. A. A. White.—p. 44.
Case of Farmer's Lung. B. Mann and W. Miall.—p. 48.
Intestinal Tuberculosis with Stenosis and Obstruction. W. C. Harris. —p. 50.
Use of Thiosemicarbazone with Streptomycin in Pulmonary Tuberculosis. M. J. Greenberg.—p. 53.
'Electric' Pneumothorax Refills. D. A. Herd and J. Aspin.—p. 56.

Ugeskrift for Laeger, Copenhagen

113:1761-1782 (Dec. 27) 1951

*Crystalline and Amorphous Zinc-Insulin Compounds with Prolonged Action. K. Hallas-Møller, K. Petersen and J. Schlichtkrull.—p. 1761.
*Clinical Investigations on New Insulin Preparations with Prolonged Action: Zinc-Insulin Preparations Used in One Daily Injection. K. Hallas-Møller, M. Jersild, K. Petersen and J. Schlichtkrull.—p. 1767.
Diabetes and Pregnancy: Introduction. J. Pedersen.—p. 1771.

Zinc-Insulin Compounds with Prolonged Action.—Hallas-Møller and his associates studied the physiochemical interplay between insulin and zinc and its significance for the action of insulin. The zinc ions affect the solubility of insulin, depending on the pH, and cause insolubility at the pH of the blood if interfering ions (such as phosphate and citrate) are not present. At neutral pH the insolubility is accompanied by a binding of zinc to insulin. Insulin crystals in a suspension containing zinc (2 mg. zinc/1,000 units) at a pH of 7 may contain about 2% of zinc. Biological tests showed zinc-insulin suspensions to have a prolonged insulin effect. The range of activity depends on the form of the insulin (amorphous or crystalline), the zinc ion concentration, and other factors, and can be varied within wide limits. Clinical tests with zinc-insulin suspensions in diabetic persons confirmed that insulin preparations with different ranges of activity suitable for clinical application can be produced without the use of substances such as protamine and globin.

Clinical Use of Long-Acting Insulin Preparations.—In 65 cases of severe diabetes Hallas-Møller and his co-workers tested three zinc-insulin preparations with action prolonged for from 18 to over 30 hours. The preliminary results indicate that even in severe diabetes, satisfactory blood sugar levels can be maintained with one daily injection when these three types of zinc-insulin are available so that a choice can be made. Possibly two types of zinc-insulin preparations would suffice, since the preparations are miscible.

114:37-68 (Jan. 10) 1952. **Partial Index**

*Congenital Pyloric Stenosis: Results of Operative Treatment in 102 Cases. J. Vesterdal.—p. 37.
Pre and Postoperative Treatment of Infants. J. Vesterdal.—p. 40.
Further Notes on Rickets: Cases from 1951. E. Overvad.—p. 46.
Retrosternal Diaphragmatic Hernia: Operative Treatment of Case. J. L. Hansen and F. R. Mathiesen.—p. 50.
Renal Calcinosis in Vitamin D_2 Intoxication. B. Mølgaard.—p. 53.
Clinical Results in Irradiation of Hypothalamic Region with Ultrashort and Microshort Waves (Radat), with Special Regard to Effect on Chronic Polyarthritis: Preliminary Report. G. Kelstrup.—p. 57.

Congenital Pyloric Stenosis: Results of Operative Treatment in 102 Cases.—Vesterdal finds that surgical treatment of pyloric stenosis is more advantageous than medical treatment. Among 90 boys and 12 girls, aged 15 days to 4 months, treated operatively in the period from 1947 to 1950, there were no postoperative deaths. The average duration of hospitalization was 15 days. In one case reoperation was necessary because of adhesions at the site of the pyloric incision. Follow-up from four months to four years after discharge revealed two deaths, neither one attributable to the pylorotomy. In 84 cases the course has been uncomplicated, in 11 there had been slight vomiting for a time, in 3 cases the infants had not thrived at first, and in 2 instances there had been prolonged catarrhal disorder and dyspepsia. The importance of adequate preoperative treatment of dehydration for good results is stressed.

BOOK REVIEWS

Obstetrical Practice. By Alfred C. Beck, M.D. Fifth edition. Cloth. $10. Pp. 1073, with 969 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1951.

This popular textbook of obstetrics has been extensively rewritten, and many new illustrations have been added. The physiology of reproduction and the early development of the embryo have been brought up-to-date by the addition of pertinent new information. The management of normal pregnancy including nutrition has been expanded to conform to the changing pattern of obstetric care. The diagnosis and treatment of the complications of pregnancy are discussed in the light of new developments in medicine. One of the most useful features of this book is the detailed description of the mechanisms of labor in the various presentations and positions. Each step is illustrated by simple drawings to enable the student to follow the action easily. Such emphasis on basic principles in obstetrics is sound teaching.

Unfortunately, this author, like so many others, did not dare to omit those practices and procedures made obsolete by medical progress. As an example, discussion of packing of the vagina and the use of a bag have no place in the modern management of placenta previa and could have been deleted. This edition, like its predecessors, is well organized, lucid in style, and effectively illustrated. The bibliography is more than adequate. It should retain its place among our standard obstetric texts.

Monographs on Surgery 1952. Editor: B. Noland Carter, M.D., Ph.D., Professor of Surgery, University of Cincinnati, Cincinnati. Advisory editors: Gynecology, Joe V. Meigs, M.D., Clinical Professor of Gynecology, Harvard University Medical School, Cambridge; Urology, Charles Huggins, M.D., Professor of Urology, University of Chicago; Orthopedic Surgery, Alfred R. Shands, M.D., Medical Director, Alfred I. duPont Institute of Nemours Foundation. Cloth. $12.50. Pp. 430, with illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1952.

The 1952 edition of "Monographs on Surgery," edited by Dr. B. Noland Carter, professor of surgery, University of Cincinnati, is an excellent book. This is the third volume of the "Monographs on Surgery." These volumes replace "Nelson's Loose Leaf Surgery." This volume consists of a group of outstanding papers, written by many authors, dealing with important surgical subjects. These papers should, indeed, be considered chapters on surgical subjects. Each of the subjects has been covered by an authority. An outstanding section of the volume is a group of seven papers dealing with urinary incontinence in the female. This symposium alone is well worth the price of the book. The paper, the type, and the illustrations are good. This monograph should be a welcome addition to surgical literature. Such monographs, constantly kept up-to-date, provide material of great importance to the practicing surgeon.

Physician to the World: The Life of General William C. Gorgas. By John M. Gibson. Cloth. $4.50. Pp. 315, with 6 photographs. Duke University Press, College Station, Box 6697, Durham, N. C., 1950.

This is an interesting and entertaining biography of Dr. William C. Gorgas, the Army physician who has been called by many "the man who made the building of the Panama Canal possible." Although his name is not so familiar to the present generation, Gorgas is most noted for his brilliant work in overcoming yellow fever. The Gorgas story is that of a young man whose determination to enter the Army first led him to go through medical school, of an Army physician who deliberately entered a yellow fever ward to study the disease, of the romance of a physician who married one of his patients, of the struggle to make the Panama Canal area safe for workers in the face of ridicule, and of the successful health-protection campaign launched among American soldiers during World War I. This book is recommended to all readers interested in medicine, history, and a tale well told.

Observations on the General Effects of Injury in Man, with Special Reference to Wound Shock. By R. T. Grant and E. B. Reeve. Medical Research Council Special Report Series no. 277. Paper. 8s. 6d. Pp. 313, with 19 illustrations. His Majesty's Stationery Office, Box 569, London, S.E.1, 1951.

This book is based on detailed clinical and laboratory observations of 230 patients with limb injuries and 80 patients with abdominal injuries. The patients were wounded during air raids or had other civilian accidents in England between 1940 and 1943, or were wounded during enemy action in the Italian campaign of 1944 and 1945. The authors, members of the clinical research unit of the Medical Research Council of Great Britain, have approached the subject of trauma from a new angle. Beginning with the objective of learning to recognize and treat "shock," they found that the prevailing conceptions of "shock" did not adequately explain the disease states found after trauma. As the result of their investigations, the authors have discarded the term "shock" and have introduced the concept of six disturbances of the normal circulatory pattern after trauma: cold tachycardia, warm tachycardia, hypertensive pattern, vasovagal pattern, cold hypotension, and warm hypotension. The advisability of this will be questioned by many American students of "wound shock," but we must again ask ourselves if any single term really covers the many clinical patterns observed after trauma. A review of the "shock conference" held at the Army Medical Service Graduate School just a year ago, in which Dr. Grant participated, will provide the background for the existing differences of opinion. Should the term "wound shock" be used to designate but one facet of what Grant and Reeve are describing? Extensive laboratory studies were done on many patients including determinations of blood volume (T. 1824 method), hematocrit, red cell size, blood urea, serum protein, serum chloride, and serum bicarbonate.

This book is a valuable reference for all those interested in the broad aspects of trauma. It should be especially useful to civilian and military surgeons responsible for the care of the wounded, not so much for teaching new methods of treatment as for serving as a basis for further investigations in this field. The book includes 76 references to shock and related subjects through the year 1948. It has many tables but neither an index nor illustrations.

Formulary of the Massachusetts General Hospital and the Massachusetts Eye & Ear Infirmary, 1951. Edited by John T. Murphy, Pharmacist-in-Chief. Prepared by Pharmacy Committee by authority of General Executive Committee. Cloth. $1; by mail $1.25. Pp. 155. Massachusetts General Hospital, Boston 14, 1951.

This handy pocket size formulary is prepared for use by physicians on the staffs of the two affiliated institutions named in the title. It is designed to provide a classified list of prescriptions for drug preparations that are stocked by the pharmacy department of those institutions. The admission of preparations is governed by rules that limit the selection of drugs to those marketed under official (nonprotected) names or to single brands in the case of products sold only under protected names. Staff physicians are not restricted absolutely to preparations that are included but are urged to confine themselves to the list, particularly in the care of outpatients. Special provision is made for the control and labeling of new preparations intended for clinical evaluation or controlled experiments. Specific instructions are provided concerning the form of prescriptions for outpatients, the issuing of narcotic drugs, and the refilling of prescriptions for other drugs. Prescriptions are specified also for hypodermic instruments, which are to be dispensed to patients. Preparations to be administered orally in teaspoonful doses are dispensed with a standard size plastic spoon of approximately 4 cc. capacity; U. S. P. standard medicine droppers are dispensed for all preparations intended for systemic action that are prescribed in drop doses. The approximate number of drops per cubic centimeter is indicated for preparations prescribed by this method to allow for differences in viscosity and surface tension.

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

A conversion table of metric and apothecary weight and volume equivalents is also provided.

The quantities of all ingredients indicated in the listed prescriptions of the text are expressed only in the metric system. The ingredients are identified by official, generic, or chemical terminology. The prescriptions are numbered but classified according to pharmacologic action under three main subdivisions: enteral use, parenteral use, and topical use. A numerical listing is appended to the main text, together with an index, which includes cross reference to synonyms and trade names.

The formulary is considered adaptable to any hospital or clinic that does not already have a formulary of its own and to individual members of the medical profession as a convenient guide to prescribing. Some authorities are likely to question the inclusion of nonofficial multivitamin formulas containing components not yet established as essential in human nutrition. The spelling of the generic name, piperoxane, should be amended to drop the final "e." The omission of the prefix "p-" for sodium p-aminobenzoate is not consistent with retention of that symbol for sodium p-aminosalicylate. No other obvious errors or discrepancies were noted. The formulary should well serve the purpose for which it is prepared.

Endocrine Functions of the Pancreas. By Bernard Zimmermann, M.D. Publication number 114, American Lecture Series, monograph in American Lectures in Endocrinology, edited by Willard O. Thompson, M.D., Clinical Professor of Medicine, University of Illinois College of Medicine, Chicago. Cloth. $2.50. Pp. 82, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1952.

The publisher of this series of monographs has made a notable innovation in American medical literature. To serve their purpose best the titles should include topics dealing with subjects of recent interest and development, which are not elsewhere accessible, and should be written by authors who have themselves contributed to the subject. The value of the individual monographs, which appear in this series, varies with the degree to which these requirements have been met. The endocrine function of the pancreas, which is the subject of the monograph under consideration here, is too broad a subject to be encompassed in a single lecture. Although well-written and presenting an excellent summary of present concepts in the field, the first 56 pages, dealing with the history and nature of insulin, metabolism in diabetes, action of insulin, regulation of internal pancreatic secretion, and lipid metabolism, present little new information that cannot be found in available texts and review articles. The last chapter of the monograph dealing with the "hyperglycemic factor," a field to which the author himself has contributed, is the best and summarizes masterfully the status of this problem. Despite the above criticisms this monograph can be recommended to the reader desiring a brief well-written summary of the status of the pancreas as an organ of internal secretion.

Recent Advances in Clinical Pathology. By Various Authors. General editor: S. C. Dyke, D.M., F.R.C.P. Section editors, Bacteriology: R. Cruickshank, M.D., F.R.C.P. Biochemistry: E. N. Allott, D.M., B.Sc., F.R.C.P. Haematology: R. G. Macfarlane, M.D. Histology: A. H. T. Robb-Smith, M.D., M.R.C.P. Second edition. Cloth. $6. Pp. 575, with 63 illustrations. Blakiston Company (division of Doubleday & Company, Inc.), 1012 Walnut St., Philadelphia 5, 1951.

The first edition of this volume was produced under the auspices of the European Association of Clinical Pathologists, which has now merged into the International Society of Clinical Pathology. Only about one quarter of the subjects dealt with in the first edition are found in the second, and the chapters dealing with these have been rewritten. The section on bacteriology has chapters on enteric infections, staphylococcal infections, tuberculosis, virus infections, common fungus infections, antibiotic therapy control, and hospital infections. The chapters on biochemistry deal with liver function tests, the electrolytes of body fluids, diabetic coma, diseases of the skeleton, assay of hormones in the urine, paper chromatography, and micromethods of blood analysis. The chapters on hematology are on the rhesus factor, hemoglobinometry, the reliability of some hematological measurements, hemolytic anemia, the deficiency anemias, new optical and cytological techniques in hematology, and laboratory control of anticoagulant therapy. The chapters on histology are on endometrial biopsy, skin biopsy, the wet film technique in neurosurgery, biopsies in diseases of the rectum and bladder, histochemistry in diagnostic histology, histological diagnosis of solid ovarian and testicular tumors, and infertility.

The last chapter covers laboratory design and equipment. Various authors have prepared the chapters mentioned. Each chapter has comments on clinical interest and interpretation. The chapters cover many fields of clinical pathology, but a book compiled of chapters written by various authors has gaps, and there is not an even distribution of emphasis, because the writers limit themselves to only a segment of the whole. Thus, the text has nothing on serology, parasitology, and stomach, stool, and urine examinations.

Essentials of Histology. By Margaret M. Hoskins, Ph.D., and Gerrit Bevelander, Ph.D. Second edition. Cloth. $4. Pp. 240, with 137 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1952.

This edition has the same presentation of the morphology of tissues and organs as the first. Several sections have been revised, and new material has been added. About 20 of the original illustrations have been revised or replaced by new drawings. The book consists of 17 short chapters and an index. Specialized tissues and systems or organs are described. There is no bibliography. The two color plates illustrate the morphology of the blood cells and blood forming tissues of the bone marrow.

The text and the illustrations, which are chiefly sketches in black and white, do not have the detailed information contained in the better organized and illustrated histology books used for instructing medical students. This volume is for use in nonprofessional levels of teaching in which precision in detail is not emphasized. For example, the authors describe the lining of blood vessels as squamous epithelium and comment that when simple squamous epithelium lines the blood vessels it is called endothelium.

Prostate Gland Disorder. By Edwin W. Hirsch, M.D. Cloth. $1.25. Pp. 130, with 1 illustration. Greenberg, Publisher, Inc., 201 E. 57th St., New York 22, 1939-1952.

It is evident that this pamphlet was written for lay consumption. The author believes that the prostate gland has important physiological functions and that when it is diseased it may cause much trouble He states that chronic inflammatory changes in the prostate gland give rise to a wide range of symptoms and that it is the basis for most sexual difficulties as well as resulting psychic disturbances. He believes that most of these complications can be cleared up by treatment of the prostate gland with massage and the use of modern chemotherapeutic agents. It would hardly be possible that the prostate gland with its limited physiological function could cause the various symptoms cited. A variable degree of infection of the prostate gland exists in many men over 40 years of age, and, in most instances, this does not affect the general health. The views expressed in this book regarding the etiology of prostatic enlargement with urinary obstruction as well as its treatment are unorthodox. Many of the theories lack a scientific basis and few urologists would agree with them.

Problems of Consciousness: Transactions of the Second Conference, March 19-20, 1951, New York, N. Y. Edited by Harold A. Abramson, M.D. Cloth. $3.25. Pp. 178. Josiah Macy, Jr. Foundation, 565 Park Ave., New York 21, 1951.

This volume contains the Transactions of the Second Conference on Problems of Consciousness held under the sponsorship of the Josiah Macy, Jr. Foundation. The conference brings together outstanding investigators, whose work in some respect touches the common problem of proper interpretation of concepts of consciousness. The second conference under the chairmanship of David G. Wright was participated in by 24 members representing the scientific fields of psychiatry, physiology, anatomy, experimental biology, sociology, anthropology, and religion. The general problems discussed at this meeting were psychological and psychodynamic views of consciousness, variations in scope of awareness, and variations in states of awareness in schizophrenic patients. The presentations are made informally, and verbatim discussion of members present concerning these subjects is presented.

QUERIES AND MINOR NOTES

TOXEMIA OF PREGNANCY

To the Editor:—*What is the therapeutic rationale for using intramuscularly administered magnesium sulfate in patients with toxemia of pregnancy? Is its use based on sound pharmacologic grounds?* *Harold J. Gregg, M.D., Tucson, Ariz.*

Answer.—Magnesium sulfate is used in the treatment of preeclampsia and eclampsia because of its sedative and vasodilating effects. These pharmacologic actions favor a decrease in the blood pressure and allay the convulsive seizures. The efficacy of the drug as a central nervous system depressant and as a vasodilator has been substantiated by experimental and clinical evidence. It is considered the most efficient drug for allaying the convulsions of tetanus. It has been used extensively in the treatment of hypertension and uremia because of its vasodilating effects. Haury has shown that intravenous injection of magnesium sulfate produces marked vasodilatation in the splanchnic organs and the kidneys.

It may be administered intravenously, although most clinicians favor the intramuscular route. It is safe to administer as much as 10 gm. as an initial dose deep into the muscles and 5 gm. every six hours for two or three days. This dosage will not result in critical levels of serum magnesium.

PRURITUS VULVAE AND ANI

To the Editor:—*A 25-year-old woman has pruritus vulvae and ani and frequent and urgent urination. Consultation with qualified urologists and dermatologists has failed to give an answer to her problem. Although complete examinations and careful laboratory studies have been made, no explanation has been found for her complaint. She is Rh positive, and her husband is Rh negative. The question raised by the patient is whether the incompatibility of her own and her husband's blood would give rise to recurrent urinary troubles and pruritus, possibly on an allergic basis.*

Alan L. Hays, M.D., Odessa, Texas.

Answer.—The only possible harmful effect from Rh sensitization is intravascular hemolysis, either following a transfusion of incompatible blood or involving the blood of an erythroblastotic baby. Transfusion hemolysis could be followed by lower nephron nephrosis and uremia, but could hardly be blamed for the urinary difficulty and pruritus of which this patient complains. Moreover, the Rh typings in this case are reversed, and there is no reason to suspect the presence of any abnormal antibody in the patient's serum.

SUPERFLUOUS HAIR

To the Editor:—*A girl, 12 years of age, in apparently perfect health, has noticed the growth of superfluous hair on her upper lip and arms. She has never had any serious illness and is of average height and weight. The menses have not started. What is the recommended method for removal of hair on the lip?* *M.D., Ohio.*

Answer.—It would be well to withhold treatment or electrolysis until puberty, but, if treatment must be instituted now, satisfactory results could probably be obtained by bleaching the hairs with a solution of peroxide and ammonia or rubbing them with a fine pumice stone or sandpaper made for the purpose. If results of these methods are not satisfactory, one can use commercial chemical depilatories, a procedure to be delayed as long as possible and used with great caution.

VACCINES FROM KILLED TUBERCLE BACILLI

To the Editor:—*An editorial on anatuberculin vaccination,* (New England J. Med. 245:230 [*Aug. 9*] 1951) *discusses a report on the use of killed tubercle bacilli anatuberculin (Petragninis anatuberculin) instead of BCG vaccine in Italy? Have there been any other reports on this procedure?*

Charles H. Keene, M.D., Buffalo.

Answer.—Many attempts have been made at developing antituberculosis vaccines from killed tubercle bacilli. Perhaps the best vaccines of intact heat-killed bacilli were prepared by S. A. Petroff, A. Branch, and F. B. Jennings Jr. (Immunological Studies in Tuberculosis: Resistance of Animals Sensitized with Heat Killed Tubercle Bacilli to Measured Infecting Dose, *J. Immunol.* 16:233-257 [March] 1929) and later by E. L. Opie and J. Freund (An Experimental Study of Protective Inoculation with Heat Killed Tubercle Bacilli, *J. Exper. Med.* 66:761-788 [Dec.] 1937) in this country. Both of these authors reported that heat-killed bacilli used as a vaccine conferred some protection in vaccinated animals, but it is the consensus of most authorities that the protection of heat-killed bacteria is much weaker than that produced by living bacilli. There seems to be something in living bacilli that is lacking in dead bacilli, such as the enzymes and complex proteins that add to the antigenic power. On the basis of this hypothesis, Stimpert has prepared a vaccine of bacilli killed by ultraviolet light. Other attempts have been made to kill the bacilli by high pressures, but thus far no outstanding successes have been reported. There are no reports to this writer's knowledge, on "Petragninis anatuberculin" or other dead tubercle bacillus vaccines that would indicate any advantage over BCG.

TREATMENT OF IRITIS

To the Editor:—*A 55-year-old woman had iritis in the right eye two years ago; it cleared in three weeks, and there was no recurrence. She was given atropine and salicylates. Since Oct. 10, she has had eight attacks in the left eye. The eye becomes slightly injected, and there are neither cells nor fibrin in the anterior chamber. Posterior synechiae develop, which are broken with increasing difficulty with 10% phenylephrine (neo-synephrine®) hydrochloride packs. Advice is requested regarding treatment, particularly the advisability of administering streptomycin. Attacks are promptly relieved by cortisone (cortone®) ointment, atropine, and salicylates. She shows no reaction to purified protein derivative no. 1 but has a severe reaction to no. 2 dilution.* *M.D., Michigan.*

Answer.—Instead of this patient's having a recurrent iritis, it is possible that the cortisone has been suppressing the inflammatory response that becomes evident whenever the drug is discontinued. Cortisone has no effect on the cause of the inflammation, and the remarkable results seen with its use should not allow neglect of the usual diagnostic survey for the cause of the iritis.

Woods ("Endogenous Uveitis," Manual, American Academy of Ophthalmology and Otology, Rochester, Minn., 1950) divides iritis and uveitis into granulomatous and nongranulmatous types. The granulomatous type has an insidious onset, a torpid course, and is associated with thick, heavy "mutton fat" keratitic precipitates and posterior synechiae. It occurs with granulomatous infections, such as syphilis, tuberculosis, brucellosis, sarcoidosis, leprosy, lymphogranuloma venereum, fungus infection, anc parasitical and virus diseases. The nongranulomatous type has ar acute onset often associated with an upper respiratory tract o kidney infection and is associated with the presence of many cell in the anterior chamber; the cells are so numerous that a hy popyon may be present. There are a few dot-like keratitic precip tates, few synechiae, and a tendency toward spontaneous in provement. Recurrent attacks of nongranulomatous iritis ma give rise to signs of the granulomatous type. It is associated wit ocular sensitivity to Staphylococcus and Streptococcus and con monly occurs with arthritis, old gonorrheal urethritis, and fo of infection.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

A minimal diagnostic survey for the patient with iritis includes slit lamp examination to determine the type of inflammation and a careful history to determine the onset and significant past history. Physical examination should be directed toward discovery of objective evidence of granulomatous disease, with particular attention to the skin lesions and adenopathy of sarcoid and previous venereal disease. Possible foci of infection in the teeth, sinuses, tonsils, gallbladder, and genitourinary tract (urinalysis, prostatic massage, or vaginal examination) should be investigated. Roentgenograms of the teeth and sinuses may be helpful. It should be recognized that only a minute proportion of uveal inflammations are secondary to focal infection, and all other causes must be definitely excluded before surgical eradication of infection is advised. Blood tests for syphilis and brucellosis are indicated. If Brucella agglutination is positive, further studies to exclude brucellosis, such as blood culture and skin testing, may be indicated. Tuberculin testing should be done, but the findings must be interpreted with great care. A positive test is by no means definite evidence that the ocular disease is of tuberculous origin. A chest roentgenogram should be made in order to exclude the lesions of sarcoid or a primary tuberculous complex. The Frei test should be used to exclude lymphogranuloma venereum.

Granulomatous inflammation caused by tuberculosis is probably the most difficult to diagnose, since the ocular disease represents a bacterial sensitivity, and organisms are not present in the eye, nor could they be recovered if they were. Diagnosis should be based on an ocular lesion compatible with the diagnosis of tuberculosis, a skin sensitivity compatible with the diagnosis, and exclusion of other disease causing the same clinical appearance. Streptomycin and *p*-aminosalicylic acid should not be administered unless this is done. The above suggestions represent the minimal study to which a patient with iritis is entitled; many patients require more elaborate study.

COR PULMONALE DUE TO BRONCHOGENIC CARCINOMA

To the Editor:—*Pulmonary arteriosclerosis is frequently found with cor pulmonale as a result of pulmonary hypertension; however, as a primary etiological agent in the production of cor pulmonale, primary pulmonary arteriosclerosis must be present. It is my impression that bronchogenic carcinoma with carcinomatous lymphangiitis is a commoner cause of cor pulmonale. I would appreciate clarification of this problem.*

M.D., New York.

Answer.—Bronchogenic carcinoma per se does not predispose to or promote either pulmonary or systemic arteriosclerosis. The secondary effects of the carcinoma (bronchial obstruction, atelectasis, secondary infection, and pleural involvement) might cause pulmonary emphysema and fibrosis with increased pulmonary tension; this may even lead to hypertension. However, this rarely occurs, and cor pulmonale is a direct result of the secondary effects of the cancer rather than of the cancer itself.

Lymphangitic carcinomatosis of the lungs is frequently associated with involvement of the pulmonary vascular system, including the arterioles and the lymphatic structures. The foreign literature abounds with such reports; the English literature, until recently, has almost ignored this condition.

The type of carcinoma referred to above is a form of metastatic carcinoma, reaching the lungs primarily through the lymphatic system and through the lesser circulation. Most of the cases reported disclose that primary cancer in the stomach is of the scirrhus type; other organs involved as the primary source include the pancreas, ovaries, kidneys, and the liver. Although the lung as a primary source is not recorded, cancer might develop there. Carcinoma originating either in the smallest bronchioles or in the alveoli is a different entity, pathologically, and, in itself, does not cause cor pulmonale.

In metastatic lymphangitic carcinomatosis, there is widespread involvement of the pleural and parenchymal lymphatics, with fibroplastic changes and many disseminated cancer emboli in the pulmonary arterioles. In some cases, there is growth of cancer cells in the blood capillaries and in the lymphatics. It is these changes that give rise to pulmonary hypertension and its sequel, cor pulmonale.

Of the theories for this association, the most widely accepted is that a special kind of cancer cell, with little tendency to clump, sets up this type of fibroplastic inflammation wherever it settles. The reported instances occur mainly in the young to the middle-aged. The early symptoms are respiratory (dyspnea, cough, and increased cyanosis) and evidence of right heart failure, with a paucity of pulmonary physical signs and with little or no reference to the primary source of the malignant growth. Diagnosis is made at autopsy.

DIABETES MELLITUS

To the Editor:—*A man, aged 40, had mild diabetes, controlled by diet without insulin. Last month he had bronchopneumonia, and acidosis developed. The blood sugar level was 900 mg., the carbon dioxide was 20%, and the serum was milky with fat. He is now ambulatory but complains of weakness. His daily diet consists of carbohydrates, 150 gm.; proteins, 80 gm.; and fat, 75 gm. The blood sugar level is 330 mg. The urine contains much sugar before meals and occasionally acetone. The patient was taking NPH insulin, 40 units before breakfast, and regular insulin as necessary according to urine tests, but since these always showed much sugar, he now takes regular insulin, 40 units, three times a day before meals. Please advise management.* *M.D., New Jersey.*

Answer.—Not enough data are available to give a definite answer to this query. This patient should be hospitalized to determine whether the increase in severity of the diabetes is real and whether the high requirement of insulin is necessary. The possibility of complications, such as pulmonary tuberculosis, local and general infections, and diseases of the liver and other glands, should be investigated.

Any responsible complication should be found and treated. The dose of NPH insulin should be increased steadily until an amount is found that will provide satisfactory blood and urine sugar tests in the late afternoon, evening, and night. The dose of regular insulin before breakfast should be continued and may be given either in the same syringe with the NPH insulin or by separate injection. After the dose of NPH insulin has been increased to the level suggested, the dose of regular insulin should be adjusted to the level that will yield good urine and blood sugar tests just before the noon meal. Temporarily, until better control of the situation has been gained, a supplementary dose of regular insulin before the evening meal may be needed. It must be kept in mind that this patient may prove to be one of those rare persons who has a high insulin requirement.

It is likely that, as the diabetic condition comes under control, the diet will have to be increased. The one now used provides only 1,600 calories daily. A man, aged 40, weighing 60 kg. (132 lb.), requires carbohydrates, 150 to 180 gm., protein, 70 to 100 gm., and fat, 80 to 100 gm., a day, according to the amount of physical activity.

THE SIZE OF THE EYE

To the Editor:—*Does the eye remain the same size from birth to death, excluding any systemic or organic disease? Are there any other organs of the body that maintain the same size throughout life?* *H. Stein, M.D., Philadelphia.*

Answer.—The statement that the eye remains the same size from birth to death is not strictly correct. During the first few years after birth the eyeball reaches almost its full size, though growth does not cease until the end of the first decade of life. But the internal differentiation of the structure of the retina, including the central fovea, matures toward the end of the first year. For a comparison of the curves of growth of the various organ types during human postnatal development, see Scammon (in Abt's Pediatrics vol. 1, Philadelphia, W. B. Saunders Company, 1923). The curves of growth and the relatively early maturation and acquisition of full size of the sense organs and the nervous system are closely similar. For details and additional bibliographic references, see Maximow and Bloom's Textbook of Histology (ed. 5, Philadelphia, W. B. Saunders Company, 1948).

HYPOGONADISM

To the Editor:—*A man, 28 years of age, complains of nervousness and lack of aggressiveness. Physical examination results were normal except for a very light beard and a thin voice. His sexual activities are normal, and he is the father of two normal children. I would like to know if continued hormonal treatment would help this patient achieve a deeper, more masculine voice, male aggressiveness, and increased health. If so, what would be the hormone of choice, and in what doses should it be prescribed? Over a long period of time would there be undesirable alteration of his natural hormonal balance?*

M.D., Oklahoma.

Answer.—It is recommended that the following observations be made on this patient: a spermatozoa count, a basal metabolism test, and an x-ray examination of the sella turcica. If his genitalia are small and he has a low spermatozoa count, scant pubic and axillary hair, a scanty beard, and very little hair on his body, then it may be assumed that he has hypogonadism, which is probably secondary to hypopituitarism. Under these circumstances, treatment with chorionic gonadotropin would produce definite improvement. Androgen therapy would also be of value, but stimulation therapy with chorionic gonadotropin would be preferable. If his spermatozoa count and his basal metabolism are within normal limits and his genitalia are of average size, then he may be one of those persons who has inherited an inadequate number of hair follicles in masculine areas. The pitch of the voice is not necessarily a criterion of masculinity; some men with normal gonadal function have high-pitched voices. The exact status can be determined only by careful examination of the patient.

FUMES FROM CASTING IRON

To the Editor:—*A chronic cough and marked fatigue developed in a 64-year-old man after three weeks of exposure to fumes escaping from a heated core used in casting iron. The core was made of lake sand, core oil, and core binder. The patient is certain that baking flour was used as a constituent in the binder. He states that, as the molten iron was poured about the core, thick, irritating, green, yellow, and black fumes developed, and he unavoidably inhaled large amounts. The exposure occurred about three months ago, and his symptoms still persist. Examinations for heart disease and tuberculosis have shown negative results. Is there any possible correlation between the irritating fumes and this man's present condition?*

R. H. Larson, M.D., Shelbyville, Ill.

Answer.—The description furnished is characteristic of the usual "burning off" period for ferrous molding flasks. It is customary for cores to contain some organic binder, commonly dextrin or flour. The core oil on burning may give rise to low concentrations of acrolein, which is an active pulmonary irritant. The core wash may represent finely divided carbon, which also is combustible. The heat near any large recently poured flask prevents a worker from coming too close to the evolved gases. These gases, while not beneficent, are not direful. In large foundries, such gases are often exhausted to avoid excessive foundry fog. A few foundrymen become sensitized to the organic core binders. Newcomers and visitors to a ferrous foundry may acquire acute minor transient irritation of the eyes and respiratory tract but not the severer condition mentioned in the query.

SALT-WATER BATHING AND ICHTHYOSIS

To the Editor:—*A case of ichthyosis in a child has been relieved twice by salt-water bathing. Is this a coincidence?*

B. Mecklin, M.D., Watertown, N. Y.

Answer.—The relief obtained in this case of ichthyosis may not be entirely coincidental. Soaking in salt water may increase imbibition by the surface horny material and produce a temporary apparent softening of the ichthyotic skin. Unfortunately, the query does not state whether the salt-water bathing was done at the beach or in a bathtub. If the former, the fact that many patients are relieved by environmental warmth with consequent promotion of skin secretions in emulsion (sebum and sweat) must be considered. Moreover, an increase in the heat production of the body, i. e., an increase in the basal metabolic rate, tends to relieve dryness of the skin. Since these factors may be associated with the usual form of salt-water bathing and "sunning" at the beach, it is possible that they were instrumental in the improvement noted; however, since ichthyosis is a congenital and presumably nevoid anomaly, the relief usually lasts only as long as the favorable conditions remain operative. Not only measures that increase perspiration and the production and flow of sebum but also applications of and massage with oil-in-water emulsions that simulate the natural emulsion at the skin surface tend to relieve ichthyosis.

BRACKISH TASTE, BLACK TONGUE, AND ANTIBIOTICS

To the Editor:—*Two weeks after taking terramycin, 2 gm. per day, for urinary tract infection a patient had a brackish taste in the mouth. Dosage was reduced to 1 gm. a day and continued for one month. At the end of treatment, he experienced loss of appetite and had a dark brown, almost black, discoloration of the tongue. Symptoms and black tongue have continued two weeks after discontinuing treatment and are increasing. During the first week of treatment, 1 gm. of streptomycin a day was administered. Gantrisin® (3,4-dimethyl-5-sulfanilamido-isoxazole), 1 gm. a day, was taken for the first month. Can you suggest the cause? Do you recommend treatment?*

M.D., Brazil.

Answer.—Patients who take terramycin, aureomycin, or chloramphenicol often complain of curious tastes in their mouths and loss of appetite. A metallic taste in the mouth is frequently found in patients taking these antibiotics. Black tongue has been reported in patients using penicillin lozenges or troches or penicillin as an inhalant. The same may be true of patients who are taking terramycin, aureomycin, or chloramphenicol by mouth. The blackening of the tongue generally disappears after the antibiotic is discontinued. As the correspondent feels that the blackening of the tongue is increasing, it is suggested that a bacteriological investigation be made to see if superinfection with Aspergillus niger has occurred. If so, the lesion should be treated locally with methylrosaniline chloride (gentian violet) or a comparable agent.

TREATMENT OF RUPTURED EARDRUM

To the Editor:—*A patient's eardrum was accidentally broken while washing out the cerumen deposit. I would appreciate your advice concerning treatment in this case and also the prognosis.*

M.D., Wisconsin.

Answer.—Rupture of the tympanic membrane requires a minimum of treatment and a maximum of inspection. Syringing the ear and instilling eardrops are especially contraindicated. Nothing could be worse than to resort to active measures. A sterile cotton wick is sometimes introduced into the external auditory canal for the purpose of maintaining cleanliness, especially if bleeding has ensued. The prognosis for healing is good.

SULKOWITCH TEST FOR CALCIUM

To the Editor:—*What is your opinion on the reliability of Sulkowitch's test for serum calcium. I have been using this test, but the results do not parallel the calcium values of fresh blood determined by the methods of Rowe and Kahn and Fiske and Subbarow with a Leitz Ruoy photometer.*

N. Philip Norman, M.D., New York.

Answer.—It is assumed that the Sulkowitch test referred to is that for urinary calcium, which indirectly, under certain conditions, is related to the serum calcium concentration. The excretion of calcium in the urine depends on many factors other than the serum calcium concentration, and, hence, the results of the Sulkowitch test cannot be expected to parallel the serum calcium concentrations under all conditions. Factors influencing calcium excretion are calcium content of the diet, phosphate concentration in the diet, acid-base balance, kidney function, and serum protein concentration.

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MEDICINE IN 1952

PRESIDENT'S ADDRESS

Louis H. Bauer, M.D., Hempstead, N. Y.

In subscribing to the oath of office as President of the American Medical Association, I am cognizant not only of the honor conferred on me but also of the tremendous responsibilities accompanying the position. When I pledged myself to "promote the public health and welfare," I was promising not only a course of future action but the continuation of a principle that has guided the American Medical Association since its inception more than a century ago. That principle of public service has not always been popular, even among the Association's members. Repeatedly, however, the A. M. A.'s course of action has in time been justified by results, and has won universal approval.

The Association first came under heavy fire nearly a half century ago, when it began its campaign to raise the standards of medical education in this country. Medical education was at a low ebb, and it was imperative that the low grade medical schools and diploma mills existing at that time be eliminated. The campaign was successful, and today we have only high grade schools of medicine in the United States. One dramatic proof of this campaign's success lies in the fact that today this country is the Mecca for medical training. Nowhere in the world is the level of medical education higher. Nowhere in the world is there a higher standard of medical care.

THE FIGHT FOR HIGH MEDICAL STANDARDS

A little less than a half century ago there were no satisfactory criteria by which either the physician or the public could gage the purity or value of drugs or other medicaments. The American Medical Association initiated a campaign to eliminate worthless drugs and patent medicine fakirs and to establish high standards for therapeutic agents. Again the Association was attacked by those who had been guilty of fraud. The fight was won, however, and the drug industry today is on a higher plane in this country than anywhere else in the world. The industry cooperates fully with medicine in research and in the development of products of high standard. The efforts of the Association's Council on Pharmacy and Chemistry have been a major factor in attaining these results and in raising the character of medical care. Both the profession and the public have been the beneficiaries of this second campaign. So, too, I could mention the work of the Association's other Councils and Committees, which have set universally recognized standards for foods, nutrition, cosmetics, apparatus, and industrial health. The A. M. A.'s Bureau of Investigation has waged a constant war on worthless drugs, charlatanism, and quackery with marked benefit to the public. Yet without exception these campaigns have met with opposition at the start.

Now, the Association is told that its scientific activities are all right, but its socioeconomic policies are all wrong. Twenty years ago we were criticized because we dared to question some of the developing health insurance plans. What was overlooked, of course, was the fact that no criteria had been established at that time by which to assess such insurance and that little reliable information about it was then available. A year later we recommended experimentation in that field and listed safeguards to be included in plans for the protection of patients. As a result, voluntary health insurance has become the fastest growing insurance project in history and is providing a sound means for prepayment of the major costs of illness. Yet, now we are vilified because we do support it and because we continue to oppose compulsory health insurance.

CONTINUING WORK TO IMPROVE VOLUNTARY PROGRAMS

There are, of course, defects and shortages in the voluntary programs of today, and we are striving to eradicate them. Protection must be developed for those over age 65 and for those suffering from financially catastrophic illness. These gaps in coverage not only must be eliminated, but they will be, through the untiring efforts and cooperation of all physicians, prepayment plans, and insurance organizations. With such teamwork, I predict that within a few years the tumult and the shouting over health insurance will have died and the American Medical Association will receive as much acclaim for its sup-

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Read before the 101st Annual Session of the American Medical Association, Chicago, June 10, 1952.

port of voluntary health insurance as it finally received for raising the standards of medical education.

It seems difficult for some people to distinguish between careful analysis in the public interest and case-hardened do-nothingism. The Association often is accused by its uninformed or politically-motivated critics of opposing everything and supporting nothing. But what are the facts? During the entire history of the American Medical Association, with just one exception, there has been no major federal health law enacted that was not either sponsored or supported by the Association. That one exception proved to be the failure the Association predicted it would be and was not renewed by Congress when the act expired. Yes, there has been criticism and opposition, but we all know that the only individual or organization never criticized is the one that never does anything.

In my oath of office I promised "to strive constantly to maintain the ethics of the medical profession." Our profession makes no pretense of infallibility. It has faults, and we recognize them. We are striving continously to eliminate them. Unfortunately, there are a few physicians who are not a credit to their profession. They consider the practice of medicine as a means of financial gain and that alone. Such persons should be driven out of their medical societies. We have established committees to settle problems that arise in the doctor-patient relationship, and the number of those committees must be increased still further. These committees need, moreover, to be given teeth. Medical societies must be adamant in disciplining those unethical physicians who prey upon the public. A physician who charges exorbitant fees or who, when summoned in an emergency, refuses to make the call unless assured that the patient can pay, or who enters into an agreement with a pharmacist or anyone else for his own financial profit at the expense of the public, is a disgrace to the profession. Only a few are guilty of such practices, but those few do the profession incalculable harm.

MEDICAL PROGRESS THE CONSTANT GOAL

In my oath, I dedicated myself and my office to bringing increasingly improved medical care within the reach of every citizen. It is not enough that we have the world's highest standards of medical care. This type of service must reach the entire population. It is a goal not easy to attain, but we shall not fail for lack of trying. We must see to it that diagnostic facilities are available to all areas now lacking them. When such facilities are provided, physicians will be attracted to those areas. We must expand our public health facilities to cover all sections of the country. All are in agreement that such expansion is necessary. The only reservations concern the amount of authority to be given the federal government. Let all concerned cooperate and solve this problem, so that large numbers of our population shall not be without proper environmental sanitation, protection against communicable disease, and protection of their food, milk, and water supplies.

Forward looking plans are necessary for the care of chronic invalids, the number of whom is increasing, due to the constantly lengthening life span. Physicians must also take active leadership in the formation of community health councils. Satisfactory programs for the medical care of the indigent must be developed for all areas, along the lines of those in operation in New York, Pennsylvania, and several other states.

Studies of the various methods of delivering medical care are being carried on by the American Medical Association, and these studies will be continued. It becomes increasingly apparent that no one method provides the answer for every area and every group of citizens. That is one of the medical profession's objections to any government-controlled type of medical care plan. Under such a plan the same system would be imposed on every region and every individual regardless of need or local conditions.

Three years ago American physicians answered the challenge of socialized medicine. We have been under vitriolic attack ever since. We have been accused of opposing progress. We have been told that the socialization of medicine was inevitable, that the country was turning socialistic, and that it was useless to fight the government. Our answer to these claims was to meet the issue head on. We did not fear to face up to government even when an attempt was made to intimidate us. We found that many members of the legislative branch of government thought we were right and were eager to give us active support and encouragement. We have not hesitated to go to the people and tell them the story of the pitiful failures of socialized medicine elsewhere. It was not necessary to tell the people that they would never tolerate some of the conditions that inevitably accompany such a system. They saw that for themselves. We have won the support of thousands of organizations and they are continuing in the fight to roll back the persistent tide of socialism.

PUBLIC RECOGNITION OF SOCIALISM THREAT

When the weight of public opposition to socialized medicine became too heavy for the socializers to bear, we began to hear that the government's compulsory health insurance plans were not socialized medicine. That is ridiculous. Any plan which is supported by taxation of the people and in which the rules and regulations governing the participation of physicians, hospitals, and patients are written by government bureaucrats who also determine the fees for services rendered is socialized medicine in any intelligent person's language.

American medicine, having won a breathing spell in its fight to preserve its freedom, is now accelerating its efforts to improve the quality and availability of medical care. Tonight I want to assure my audience that the American Medical Association will never relax in the fight for better health and longer life for the American people. It will cooperate with any organization that is sincerely working for the same aims. The medical profession is alert to the continuing danger of its socialization, and it will remain alert. But it is aware, also, of a greater danger—a danger to the nation itself. We have not yet reached the state of socialization that now exists in England, but we are traveling along the same road and traveling at a more rapid pace. We physicians, in our fight against socialized medicine, have proved that an aroused citizenry can put a break on this rush toward socialism.

GREAT DECISION IS UP TO THE PEOPLE

Sufficiently aroused, the American people can bring to a full stop the pell mell retreat from fundamental American principles. But they cannot do it if they do not vote. It is a shameful fact that in the last Presidential election, barely 51% of the eligible voters exercised their right of suffrage. The medical profession, like other groups, has been remiss in the matter of voting, but in this crucial year of decision we intend to set a pattern of good citizenship, in registration and voting turnout. We physicians shall continue as active participants in the democratic processes of our country so long as the democratic processes remain a part of our American heritage.

The great decision—socialism or Americanism—must be made by the people. And it must be made by all the people. Some of medicine's critics have said, rather naïvely, that politics is a dirty hands business, and physicians, who belong to a clean hands profession, should not enter it. How, I ask you, can politics be anything but dirty if those with clean hands stay out?

Elihu Root, a former cabinet officer, once said: "Politics is the practical exercise of the art of self-government. Somebody must attend to self-government if self-government is to continue. The principal reproach against any American should be that he is not a politician."

GOVERNMENT CORRUPTION SHOCKS THE NATION

This nation has had an unexampled, shocking demonstration of corruption in government. Yet recently, a federal official implied that corruption was of no importance as a campaign issue. How are we to eliminate corruption in government unless all citizens express themselves in the only way that counts, by voting?

We are faced today not only with corruption in government but with an attempt to destroy everything on which this nation was built and which has made it great. American institutions and American traditions have been scoffed at. In many cases, our young people are not being taught about American history and the American Constitution, nor why our forefathers established the governing bodies of our country in the manner in which they did. Attempts are even being made to undermine their patriotism. Recently a national magazine polled a large group of young people. About 50% of those interrogated thought totalitarian government a good thing. A large number believed that the press should be limited in the news it could print. Some—and not a small number—were in favor of the "third degree," or worse, in obtaining confessions.

Some government departments seem to have similar feelings. For instance, the Federal Security Agency, the greatest propaganda agency in the United States, recently rebuked a teacher for expressing his views on socialism as he observed it in another country. The teacher was told that the publicity given his comments might bring about the exclusion of his area from the international teacher exchange program. Shall the American people tolerate such infringement of their freedom of speech?

DEMOCRACY OR BUREAUCRACY

The very fundamental philosophy of Americanism is being undermined. Our country is traditionally a democracy within a republic, but it is fast becoming a bureaucracy ruled largely by administrative law written not by elected, but by appointed officials.

Thomas Jefferson fought against too much power in central government, and supported decentralized government and freedom for individual citizens. Slowly, but surely, one by one, we are losing those freedoms guaranteed by the Bill of Rights. Personal liberties are being traded for government subsidies. We are selling our birthright for a mess of pottage. Unless we act soon, we shall suddenly wake up to find that we have traded liberty for shackles—the shackles of destructive, confiscatory taxation, the shackles of complete dependence upon government for everything in life, the shackles of suppression of initiative and competition, the shackles of suppression of a free press and free speech. In Washington parlance today the word government rapidly is being substituted for the word country. We are told what we should do for our government. I say, we should do everything for our country, but our government should serve us.

CHALLENGE TO BOTH POLITICAL PARTIES

It is the task of our two major political parties, and their leaders, to see that the people of the United States are given a government that serves rather than a government that dominates. Next month those parties will hold their national conventions here in Chicago. The delegates to these conventions will nominate the next President of the United States. They will write the platform upon which our government policy will stand during the next four years. To those delegates, I say: Your task is monumental. It is historic. Your burden of responsibility hardly has been matched since the days of the Constitutional convention itself. The eyes of the nation—yes, the eyes of the world—will be upon you. You will not be alone in the convention hall. In these days of nationwide radio and television you will have millions watching you, testing your sincerity, weighing your judgment, analyzing your motives. The platforms you write must disavow all threats to our constitutional independence and liberty. They must be bulwarks of a revitalized, positive Americanism. The men you nominate must be men of integrity—fearless men who will be guided by the highest concepts of the welfare of the nation, of the crucial need to preserve America as a haven of hope in a world that seeks peace and freedom. The party that fails to do these things will be the party of failure. A candidate who emerges from a smoke-filled room will be the candidate of defeat.

Further I say to the people of this nation: This is the year in which we must decide whether we want this country to continue its majestic growth as the greatest nation of free men the world has ever seen, or fall into lock-step with the decadent socialisms and totalitarianisms of the old world. This is the year in which we must live up fully to the proud privilege and responsibilities of citizenship for which generations of Americans have worked, fought, and died to hand down to us.

Whatever our party affiliations, we must examine closely the policies professed by every candidate. Neither straddling nor flamboyant evasion must be allowed to sway us. We must demand straightforward honesty, frankness, and sincerity in our candidates. Only in this way can we be sure that we shall have a government that represents the true will of the people—a government that derives its just powers from the consent of the governed.

About 100 years ago, Daniel Webster said, "It were but a trifle even if the walls of yonder Capitol were to crumble, if its lofty pillars should fall, and its gorgeous decorations be all covered by the dust of the valley. All these may be rebuilt.

"But who shall reconstruct the fabric of demolished government?

"Who shall rear again the well-proportioned columns of constitutional liberty?

"Who shall frame together the skillful architecture which unites national sovereignty with States rights, individual security and public property?

"No, if these columns fall, they will be raised not again."

We shall do well today to remember those words of Daniel Webster.

THE PROMISE TO FIGHT FOR FREEDOM

I am proud to be a member of the American Medical Association which has spearheaded the fight against the socialism that is creeping over this country. I am proud to be the leader of the Association during the coming year. But most of all I am proud to be an American citizen, and I intend to do all in my power to carry out the concluding pledge of my oath of office—to champion the freedom of medical practice and freedom for all my fellow Americans.

American institutions and American traditions must be protected. Through the aroused vigilance of the American people they can and shall be protected. Let us never permit this nation of ours to descend to the level depicted in the third stanza of Kipling's "Recessional":

> "Far flung our navies melt away
> On dune and headland sinks the fire
> Lo! all our pomp of yesterday
> Is one with Nineveh and Tyre,
> Lord God of Hosts! Be with us yet
> Lest we forget! Lest we forget!"

131 Fulton Ave.

DISADVANTAGES OF SPHINCTER-PRESERVING OPERATIONS FOR CANCER OF THE RECTUM

Frank H. Lahey, M.D., Boston

The title of this discussion has been deliberately made provocative to aid those who doubt the wisdom of employing sphincter-preserving operations in cancer of the rectum to decide as soon as possible whether it is justifiable to continue their use. It is the frank purpose of this discussion not to attempt to settle anything definitely but to question the wisdom of using these operations except as palliative procedures and to present recent data from the literature on which at least some impressions concerning this matter may be based.

A comparison can now be made of the three operations designed to preserve anal function. One is the procedure employed by Dixon and Wangensteen, which is virtually a low anterior resection with an end-to-end anastomosis. The second was originally proposed by Maunsell and Weir and is also an anterior resection with end-to-end anastomosis, differing from the first only in the method of doing the low anastomosis (by evagination, amputation, suture, and invagination). The third is the pull-through or sphincter-preserving operation of Babcock and Bacon in which the bowel is pulled through the sphincter or the sphincter is cut and resutured.

In any comparison of attempts to preserve the anal sphincters with anal continence in surgical treatment of cancer of the rectum, one should first state that the abdominosacral removal of the rectum and sigmoid, popularized by Miles, with an abdominal colostomy, is an extremely satisfactory operation for cancer in this region. Were it not for the objection, fancied or real, to the abdominal colostomy, no other operative procedure would even be considered comparable with it in effectiveness. In this operation a long tube of bowel with its adjacent mesentery containing the constant upward pathway for spread of the growth into lymphatic nodes is removed. The lateral ligaments well out to the side of the pelvis, with their contained middle hemorrhoidal vessels and accompanying lymphatics, are removed. The levators with their laterally placed, however sparse, lymphatics, as well as the inferior hemorrhoidal vessels with their accompanying lymphatics, are removed. The operation is performed with the anus closed and without spill of cancer cells from within the closed intestinal tract, limiting the possible sources of direct cancer cell spread entirely to the handling of the malignant lesion or dissemination from the outside by contacts with the lesion.

The mortality rate for this operation is fairly well established. The rate in this clinic for 1949, the last year for which figures are available, was 2.3%. Our operability rate for the same year was 96.4%. The five year survival rate for the period from 1945 to 1949 for all the patients who could be submitted to the radical abdominoperineal removal, including those with favorable and unfavorable results, was 45.4%, and in the group with most favorable results it was as high as 90%. This, it must be admitted, is a most satisfactory set of figures with which to contend that abdominosacral removal of a cancer of the rectum with an abdominal colostomy is an almost ideal operation. It supports the contention I have often stated over the years, that is, that, for practical purposes, the only chance to cure patients with cancer of the rectum is the first one, for which reason the operation must be the most radical that can be employed

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From the Department of Surgery, the Lahey Clinic.

and leave the patient in a reasonably happy state postoperatively. The abdominosacral procedure is applicable to all types of lesions, large and small, to all types of persons, fat and thin, to all types of pelves, wide or narrow, shallow or deep, and to all grades of lesions, of low or of high grade malignancy. With these requirements in mind, it can be stated without reservation that this operation, better than any other operation available, most completely meets them. Every other operation for this lesion must, in justice to the patients, be subjected constantly to the most critical comparison with it.

Comparison of results of anal-function-preserving operations with these figures must be based at least on ability to accomplish relatively the same operability rate, the same mortality rate, and the same five year survival rate, with retention of rectal sensation that distinguishes gas from feces and warns the patient of need for defecation, so that anal contents are retained even in the presence of liquid feces. In discussing these requirements, I have over the years, in taking an early and continuing stand against these attempts to preserve the function of the anal sphincter in patients with cancer of the rectum, warned that anything short of these requirements is, together with its other limitations, the establishment of what amounts to a perineal colostomy, the most unfortunate situation for either a colostomy or an ileostomy.

As reports in the literature gradually accumulate, more and more data are becoming available on which to make decisions for or against these procedures. Recent reports by Morgan,[1] Goligher,[2] Dukes [3] and others from St. Marks Hospital with results separate from those of the originators of these methods are now available for study, and from these may be drawn the following conclusions. Since the rectal sensation that warns the person of the desire for defecation probably occurs in the lower 7 to 8 cm. of the rectal mucosa, this sensation is not preserved in the Bacon and Babcock operation in which this segment of sensation-recognizing bowel is removed. It is likewise just, in the light of data now available, to state that the Babcock and Bacon procedures (the pull-through procedures) may retain continence with solid feces but cannot be depended on with liquid feces.

With the technical difficulties of the Maunsell and Weir operation, particularly the need for a long pelvic colon that can be prolapsed through the anus with this type of amputation and anastomosis (evagination and invagination), which cannot always be depended upon to be present, the certainty of blood supply in the patient in whom an adequate amount of colon is pulled down and prolapsed through the anus for this type of procedure must always be, to a degree, dubious.

Of all the procedures proposed to preserve the anal sphincters, that of Wangensteen and Dixon best fulfills the requirements of retaining sensation in the rectal mucosal wall and continence of the sphincters for solids and feces. Of all three procedures, it most completely fulfills the requirements of offering the patient what is promised in an anal-sphincter-preserving operation, that is, continence for solids and liquids with retention of rectal appreciation of the desire to defecate.

In a report by Goligher, figures became available for 146 cases of rectal cancer treated at St. Marks Hospital in London by these three procedures. The mortality rate is reasonable, 8.2%. Certain other disturbing factors, however, appear in this report. One out of 12 of the patients with anterior resections of the Wangensteen and Dixon type leaked feces along the abdominal drain that is placed extraperitoneally. One out of 6 of these patients with anterior anastomoses showed by palpation defects in the suture line at some point in the circumference that had broken down, usually in the posterior third, and communicated with the extrarectal presacral cavity. The late results in these cases are of most striking interest to anyone who is concerned with the comparison of the abdominosacral operation of Miles with operations designed to preserve anal continence. Of 132 patients treated by anterior resection, 11 have had local recurrence at or near the suture line. As stated by the author, "as most of these operations were performed in the last three or four years, further recurrences may be expected in the more recently treated cases." Local recurrence has been the fear of all surgeons who doubt the wisdom of the statement that since lymphatic spread is not downward, resections of lesions just above the peritoneal fold can be safely done if the level of transection of the lower segment is 4 to 5 cm. from the lesion.

There appears to be more and more universal acceptance of the view that lesions of the rectum below the level of the peritoneal reflection have a high recurrence rate, and that the character of lesions at this level owing to their anatomical situation and arrangement is such that they should all be submitted without hesitation to abdominosacral removal. As stated by Gilchrist and David,[4] the likelihood of recurrence, particularly in patients with lymph node involvement, in lesions below the level of the peritoneal reflection is much greater than in lesions above the peritoneal reflection, doubtless because of the structures attached to the rectum and to the lateral lymphatic spread along these structures.

In addition, it has been stated by Dukes that in 1,262 cases of low grade malignancy, nodes were invaded in but 16.8%, while in cases of high grade malignancy, nodes were invaded in 95.5%. It is likewise known that downward spread, that much discussed and, I fear, often overtrusted aspect of cancer of the rectum, is much more likely to occur in anaplastic lesions of the rectum than in lesions of a lower grade of malignancy. The capacity of anaplastic lesions of the rectum to break through the muscularis, to skip lymph nodes in their invasions, and to spread downward and laterally makes lesions of such high grades of malignancy violate all the rules that are said to apply to lesions of low grades of malignancy at these levels. It is admitted by advocates of sphincter-preserving operations that certain conditions must make it undesirable to undertake them, notably, in fat patients with fat-filled mesenteries, in patients with shallow pelves, and in patients with large lesions. In addition to

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1. Morgan, C. N.: Cancer of Rectum, Ann. Roy. Coll. Surgeons England **9**:13-24 (July) 1951.

2. Goligher, J. C.: Blood-Supply to Sigmoid Colon and Rectum, with Reference to Technique of Rectal Resection with Restoration of Continuity, Brit. J. Surg. **37**: 157-162 (Oct.) 1949.

3. Dukes, C.: Surgical Pathology of Rectal Cancer: President's Address, Proc. Roy. Soc. Med. **37**: 131-144 (Feb.) 1944. Gabriel, W. B.; Dukes, C., and Bussey, H. J. R.: Lymphatic Spread in Cancer of Rectum, Brit. J. Surg. **23**:395-413 (Oct.) 1935.

4. Gilchrist, R. K., and David, V. C.: Consideration of Pathological Factors Influencing 5 Year Survival in Radical Resection of Large Bowel and Rectum for Carcinoma, Ann. Surg. **126**: 421-438 (Oct.) 1947.

evenly distributed according to age group from 15 years of age and over. A total of 2,535 services were rendered to these patients. It is of interest that only 71 services were rendered by these 41 internists during the same week to children under the age of 15 years. As is to be expected, the younger and middle-aged patients are more often seen in the physician's office, and the older patients, more often in the home or hospital.

The amount of time spent during a week rendering services to private patients varied in the group all the way from 3.8 hours to 57 hours. Approximately half of the internists spent from 20 to 29 hours per week on private patients, the mean for the entire group being 28.1 and the median[2] 26.4 hours. This, of course, does not include travel time, time spent in talking with patients or others over the telephone, or time spent on clerical or administrative matters. The proportion of time spent by the various physicians on diagnosis and treatment varied from 24% to 89%, with a mean of 55%. Preventive measures occupied from 3% to 72% of the time, the average being 26%. Health education occupied from 2% to 37%, the average for the group being 19%.

TABLE 2.—*Number of Hours (and Percentage of Time) Spent by Internists on Different Types of Services, Arranged According to Age Group of Patients*

	Diagnosis and Treatment		Preventive Measures								Health Education						Grand Totals	
			Initial or Repeat Health Surveys		Immunizations		Counseling		Total		In Relation to Treatment		Preventive		Total			
All Groups, Yr.	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%
15 to 29	97.8	55	35.0	20	2.1	1	13.6	8	50.7	29	19.3	11	8.6	5	27.9	16	176.4	100
30 to 39	101.3	48	52.1	25	2.0	1	14.3	7	68.4	33	31.7	15	8.1	4	39.8	19	209.5	100
40 to 49	145.0	55	51.6	21	2.3	1	22.1	8	79.0	30	30.8	12	8.8	3	39.6	15	263.6	100
50 to 59	128.7	59	29.8	14	1.4	1	14.1	6	45.3	21	32.3	15	11.0	5	43.3	20	217.3	100
60 and over	149.7	55	37.1	14	2.9	1	14.9	6	54.9	21	57.0	21	9.1	3	66.1	24	270.7	100
Totals	622.5	55	208.6	18	10.7	1	79.0	7	298.3	26	171.1	15	45.6	4	216.7	19	1,137.5	100

There was no apparent relation between the total amount of time the physician spent with patients during the week and the proportion of time utilized for diagnosis and treatment. In other words, some of the busiest doctors spent considerable time on preventive procedures and health education and, conversely, physicians who had a small practice sometimes spent a small proportion of time on these activities. Likewise, whether or not the internist has been certified by the American Board of Internal Medicine appears to have had no bearing on the proportion of time spent on the different kinds of services that he rendered to his patients.

The time spent on the various types of services in patients of different age groups is shown in table 2. When all the patients are taken as a group, a mean of 55% of the time was utilized for diagnosis and treatment, 26% for preventive measures (18% health surveys, 1% immunizations, and 7% counseling), and 19% for health education (15% related to treatment and 4% preventive). Although there are variations in the different age groups in the proportionate distribution of these three activities, the differences are not remarkable and, because of the sizes of the groups involved, probably not significant.

There was little difference in the amount of time spent on the various types of services in relation to the sex of the patient. As would be expected, diagnosis and treatment occupied a greater proportion of time in visits by the physician to the home or the hospital than when the patient was seen in the office.

COMMENT

The present study is, of course, not large enough to be definitive nor geographically widespread enough to be representative. It merely gives some indication of how a small group of well-trained internists in a large metropolitan city distribute their services. It is probable that the selection involved in the group of internists used and the high intellectual and economic level of the population served in the Washington, D. C., area would bias the results in the direction of above-average practice of internal medicine.

It should be emphasized, also, that the subjective estimates as to how much time was spent with a given patient on one type of service rather than another must necessarily be approximate. It seems significant, however, that physicians here recognize that they are spending their time on health education or preventive services. At least this shows that the intention exists to cover this area whether or not the desired goals are actually achieved. It is interesting to note, moreover, that several of the physicians wrote that they had not realized how much time they were spending on preventive measures and on health education until they began filling out the questionnaire.

Our survey cannot be compared directly with the one made by the American Academy of Pediatrics,[1] because our tabulations were made on the basis of the time spent on the various kinds of services whereas theirs was conducted on the basis of the number of visits for the different kinds of services. Since a large proportion of the preventive services for children consists of immunizations, which consume only a short period of time as compared with the longer periods spent on diagnosis and treatment, it is conceivable that the Academy of Pediatrics' investigators might have found that pediatricians spent less than 54% of their time on health supervision.

It should give internists food for thought to realize that only 55% of the time that the present group of internists spent with patients was utilized specifically for diagnosis and treatment and that 45% was utilized for preventive measures and health education. Even if the 15% spent on health education in relation to treatment were added to the time spent on diagnosis and treatment, this would still leave 30% of the internist's time spent on preventive measures, including health education in relation to prevention. Contrast here the time devoted to the study of the diagnosis and treatment of disease with the time devoted to preventive measures and health education during an internist's undergraduate and postgraduate training. It is evident that the amount of time actually spent on diagnosis and therapy in the private practice of internal medicine, as shown in this study, is entirely out of proportion. If more adequate studies of the kind here attempted are carried out and give the same general results, should not internists follow the lead of the pediatricians and allocate more of the time spent by medical students, residents, and fellows in the study of internal medicine to the study of the preventive aspects of medicine?

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[2] Medians were computed for all constants, but, since they did not differ essentially from the means the results will henceforth be given in terms of means.

SUMMARY AND CONCLUSIONS

Data from a questionnaire returned by 41 internists show that 55% of the time spent with patients during a test week is utilized specifically for diagnosis and treatment, 26% for various preventive measures (including health surveys, immunizations, and counseling), and 19% for the education of the patient in health matters. The proportion of time spent on preventive measures and health education bears no relation to the total amount of time spent with patients during the week or to the number of years the physician has been in practice, nor is it related to whether or not the physician is certified by the American Board of Internal Medicine. If further studies bear out the results of the present one, the question is raised whether more time should not be allotted in the undergraduate and postgraduate curriculum to preventive services and health education so that future internists may be better trained to render services that will take up a considerable proportion of their time with patients.

1853 Polk Street.

RESULTS OF AN INTERNATIONAL TEST IN CHEST ROENTGENOGRAM INTERPRETATION

L. H. Garland, M.D., San Francisco
and
A. L. Cochrane, M.B., D.P.H., Cardiff, Wales

Experienced radiologists and chest specialists have been shown to vary considerably in their interpretation of selected and unselected groups of survey chest films, irrespective of the size of the film.[1] They have been shown to disagree with each other and with themselves to a significant degree on rereading of such films. This phenomenon of experienced reader variation is not confined solely to chest roentgenology; it exists in most fields in which scientific tests have been made, medical, chemical, mathematical, and otherwise.[2] The first reaction of experienced persons on reading reports of this error factor is to comment, "This does not happen to me in my work." However, when such persons submit themselves to critical and competent testing, they soon find that they also are subject to similar variations. The discovery of this fact leads (or has led in our own experience) to more careful analyses of subsequent films, to adoption of methods for reducing the degree of error (by dual reading and so forth), and, therefore, ultimately to increased efficiency in interpretation.[3]

In the last decade, this inter and intraobserver film error has been studied chiefly in one country, the United States, and has been found to be of similar degree in different parts of that country for observers of comparable training and experience.[4] Some two years ago a group of British physicians studied the error problem in a series of 102 roentgenograms of coal miners' chests, and found that their opinions on these films varied "to a remarkable degree, both amongst themselves and to a lesser extent from one occasion to the other."[1b] The number of films considered "certifiable" (positive for pneumoconiosis) on both occasions by the various observers ranged from 5 to 45.

Following this British study, the opportunity arose for an investigation of reader consistency by two groups of workers, one in Great Britain and one in the United States, on a series of chest films selected for study by the British workers. This paper is a report of the results of this investigation.

MATERIAL

The material was selected as follows. The Medical Research Council of Great Britain sponsors a pneumonoconiosis research unit, which is attached to the Llandough Hospital in Cardiff, South Wales, under the direction of C. M. Fletcher, M.D. Dr. Fletcher and associates, including one of us (A. L. C.), are engaged in studies on tuberculosilicosis and other chest problems. As part of a study on early or minimal tuberculosis in non-

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From the Stanford University Medical School (Dr. Garland), and Medical Research Council, Pneumoconiosis Unit, Cardiff, Wales (Dr. Cochrane).

A companion paper has been submitted to the *Lancet*. Both papers represent joint progress reports on research efforts of various radiologists and chest specialists whose names appear in the text and bibliography.

[1] (*a*) Birkelo, C. C., and others: Tuberculosis Case Finding: Comparison of Effectiveness of Various Roentgenographic and Photofluorographic Methods, J. A. M. A. **133**: 359 (Feb. 8) 1947. (*b*) Fletcher, C. M., and Oldham, P. D.: Problem of Consistent Radiological Diagnosis in Coalminers' Pneumoconiosis: Experimental Study, Brit. J. Indus. Med. **6**: 168, 1949. (*c*) Garland, L. H.: Scientific Evaluation of Diagnostic Procedures: Thirty-fourth Annual Meeting of Radiological Society of North America, Radiology **52**: 309, 1949. (*d*) Garland, L. H.: Conditions to be Differentiated in Roentgen Diagnosis of Pulmonary Tuberculosis, Ann. Int. Med. **29**: 878, 1948. (*e*) Newell, R. R., and others: Studies on Chest Interpretation, to be published.

[2] Garland.[1d] Pearson, K.: Mathematical Theory of Error of Judgment, with Special Reference to the Personal Equation, Series B, Tr. Roy. Soc. Phil. **198**: 235, 1902.

[3] Yerushalmy, J.; Harkness, J. T.; Cope, J. H., and Kennedy, B. R.: Role of Dual Reading in Mass Radiography, Am. Rev. Tuberc. **61**: 443, 1950.

mining persons, they arranged for dual readings by six observers on a set of 14 by 17 in. (36 by 43 cm.) survey chest films loaned by the Welsh National Memorial Association. This association was asked to provide about 100 films, of which between 5 and 30 should show some signs of reinfection type tuberculosis. Dr. Wade, a member of the research unit, selected 89 of the 100 films as technically adequate and as containing the desired proportion of cases of "minimal" reinfection disease. The six British readers were asked to indicate their interpretation on a prepared form. Readings were carried out, under supervision, on two separate occasions, and the results were analyzed statistically by Mr. P. D. Oldham of Cardiff.

The 89 films were then mailed to a chest radiological research committee in San Francisco.[5] The three members of the committee interpreted the films independently on two separate occasions, using the forms forwarded from Wales. Their readings were then analyzed statistically by Prof. J. Yerushalmy of Berkeley, who prepared the tables published here.

Dr. C. M. Fletcher of Great Britain visited the United States research committee in San Francisco in May, 1950, and discussed the results of the British workers to date. Some months later, one of us (L. H. G.) visited the British group in Wales, and reviewed both sets of results; a small group of controversial films were examined by both of us in conference with Dr. Fletcher, and points of disagreement were discussed and summarized.

TABLE 1.—*Distribution of Films by British Readers According to Classifications*[6] *Used in This Test*

		T.B. Positive					
			No. Inactive				
Reader	Reading	No. Active	Clinically Significant	Not Clinically Significant	Total	Total	T.B. Negative
A	1st	11	11	12	23	39	55
	2nd	12	6	10	16	28	61
B	1st	19	3	2	5	24	65
	2nd	18	5	6	11	29	60
C	1st	17	4	7	11	28	61
	2nd	17	4	8	12	29	60
D	1st	20	5	2	7	27	62
	2nd	20	7	2	9	29	60
E	1st	5	13	3	16	21	68
	2nd	5	14	2	16	21	68
F	1st	11	9	3	12	23	66
	2nd	8	9	7	16	24	65
	Mean	13.6	7.5	5.3	12.8	26.4	62.6
	Range	5-20	3-14	2-12	5-23	21-34	55-68

Finally, the various statistical analyses were studied by each of the two statistical advisers, and agreement was reached on the basic conclusions presented in this paper.

Comments on the Report Form.—The particular report form or sheet used in these two tests was one evolved early in 1949 by the British research group. It contained columns for the following entries: (1) x-ray film number, (2) "tuberculosis" absent, (3) "tuberculosis" present, (4) process active, (5) process inactive, and (6) process of clinical significance.[6] British readers were asked to use only simple check marks and to avoid the use of queries or comments. A film might show shadows interpreted as "tuberculosis" present, with the process apparently "inactive" yet probably of "clinical significance." In such event, columns 3, 5 and 6 would carry check marks.

TABLE 2.—*Average and Range of "Agreement" and "Disagreement" Among British Readers*

	Between Pairs of Readers (Inter-individual)	Between Readings of Individuals (Intra-individual)
Agreement		
On presence of T.B.	22.7 (21-27)	24.5 (21-27)
On absence of T.B.	59.4 (53-66)	60.7 (55-68)
Disagreement		
On presence of T.B.	6.9 (2-13)	3.8 (0-8)
As percentage of all films	7.7 (2.2-14.6)	4.3 (0-9.0)
As percentage of films called positive at least once	23.2 (8.7-38.2)	13.5 (0-22.9)

American readers did not receive specific instructions as to the use of the column "process of clinical significance," and therefore sometimes recorded an abnormal cardiovascular shadow in this column. Allowance was made for this slight difference in usage of the report forms in their final analyses.

Composition of Reader Panels.—The British group consisted of the following members: L. R. West, M.D., M.R.C.P., consultant physician, Sully Hospital, South Wales; K. J. Mann, M.D., M.R.C.P., D.P.H., member of the scientific staff of the Medical Research Council; A. L. Cochrane, M.A., M.B., B.Ch., D.P.H., member of the Scientific Staff of the Medical Research Council; V. H. Springett, M.D., Prophit Scholar, Royal College of Physicians of London; I. Davies, M.D., M.R.C.P., D.P.H., Member of the Scientific Staff of the Medical Research Council; and T. W. Davies, B.Sc., M.B., B.Ch., D.P.H., Consultant Chest Physician to South Wales Regional Hospital Board.

TABLE 3.—*Average and Range of "Agreement" and "Disagreement" Among British Readers on Activity in Films in Which T. B. Is Agreed to Be Present*

	Between Pairs of Readers (Inter-individual)	Between Readings of Individuals (Intra-individual)
Agreement		
On presence of T.B.	22.7 (21-27)	24.5 (21-27)
On activity of T.B.	8.9 (3-17)	12.0 (4-18)
On inactivity of T.B.	4.9 (2-10)	9.8 (5-15)
Disagreement		
On presence of T.B.	8.9 (4-15)	2.7 (1-5)
As percentage of no. agreed to show T.B.	39.3 (17.4-71.4)	10.9 (4.2-22.7)
As to active T.B. vs. T.B. absent	0.9 (0-2)	0.5 (0-1)

The American group consisted of three radiologists: L. H. Garland, M.D., clinical professor of radiology

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4. Error may be measured in different ways. The error may be recorded as the percentage disagreement based on all films read, or the percentage disagreement based on those films called "positive" by a majority of readers, or on those films called "negative" by a majority of readers. The percentage disagreement based on all films read has been shown in one study to be about 16% between individual readers, and 8% for each individual himself on rereading.[1c] Interindividual disagreement based on films called "positive" by a majority of readers has a wide range, and was about 30% in certain studies; this means that 3 out of 10 positive cases were missed by an observer. Disagreement based on films called "negative" by a majority of readers also varied, but in actual survey studies was found to be about 1%; this means that 1 out of 100 negative cases would be over-read or called positive. Expressed briefly, there was about 30% under-reading of positive films, and 1% over-reading of negative films.

5. The committee was composed of Earl Miller, M.D., and Merrell Sisson, M.D., and one of us (L. H. G.).

6. Incidentally, Fletcher and associates are now using a revised classification as follows: "T.B. absent" (including healed primary complex); "T.B. present, active or clinically significant"; and "T.B. present, inactive, not clinically significant." The abbreviation T.B. indicates a roentgen shadow suggestive of an inflammatory pulmonary disease, probably tuberculous in origin. It is employed merely for the sake of brevity. Neither the British nor the American workers in this study believe that the bacteriological nature of the disease process can be positively determined from a roentgenogram.

Stanford University; E. R. Miller, M.D., professor of radiology, University of California; and M. A. Sisson, M.D., assistant clinical professor of radiology, Stanford University.

RESULTS

British Research Group.—There were six readers in the British group. These readers interpreted from 21 to 34 of the 89 films as positive for tuberculosis, and from 5 to 20 of these films as demonstrating active lesions. The total number called negative ranged from 55 to 68 (table 1).

The inter and intraindividual disagreement measured respectively 7.7% and 4.3% on all 89 readings. If only the films called positive are considered, these percentages were 23 and 13%, respectively. Table 2 is a summary of the findings of the British workers in this connection. Evaluation of activity showed the expected interindividual range and a rather good, i. e., small, intraindividual range (table 3).

TABLE 4.—*Distribution of Films by American Readers According to the Classifications*[6] *Used in This Test*

		T.B. Positive					
			Inactive				
Reader	Reading	Active	Clinically Significant	Not Clinically Significant	Total	Total	T.B. Negative
J	1st	20	3	12	15	35	54
	2nd	17	6	8	14	31	58
K	1st	26	..	9	9	35	54
	2nd	23	1	9	10	33	56
L	1st	18	.. †	..	10	28	61
	2nd	20	..	..	10	30	59
	Mean	20.7	2.5*	9.5†	11.8	32.0	57.0
	Range	17-26	0-6	8-12	9-15	28-35	54-61

* Reader L did not indicate clinical significance.
† Excluding reader L.

American Research Group.—There were three readers, all radiologists, in the American Group. The results of their readings are tabulated in three tables constructed similarly to those prepared for the British workers. The tables are self-explanatory and are reproduced here (tables 4, 5, and 6).

COMPARISON OF RESULTS

An analysis of the two sets of tables reveals the following facts: British readers called a smaller portion of the films positive than did American readers (the mean being 28.9 positives for the British and 32.0 for the Americans). Similarly, the British called a mean of 13.6 "active T. B." and the Americans 20.7 in this category. However, more "inactive but clinically significant" cases were reported by the British than by the Americans. As for the "T. B. negative" cases, the mean number found by the British readers was 62.6 as compared with 57.0 for the Americans.

In conferences between representatives of the two groups held first in San Francisco and subsequently in Cardiff, it became apparent that American readers tended to stress minimal abnormal shadows to a greater extent than British readers. This may be due to the fact that the three American readers previously had conducted extensive studies on minimal tuberculous pulmonary lesions, and had been "alerted" to the potential significance of very small and faint densities, especially in surveys of groups such as nurses and medical students. Conversely, in a comparable but unpublished joint study of silicosis, the British readers were prone to interpret minimal roentgen changes as "stage 1 pneumoconiosis," while the American readers tended to report such films as "negative, within normal limits." In this instance, the British workers were men who had been conducting extensive surveys on coal miners, and therefore had been "alerted" to minimal parenchymal alterations that sometimes were later found to have been the precursors of definite pneumoconiosis.

TABLE 5.—*Average and Range of "Agreement" and "Disagreement" by American Readers on Presence of T. B.*

	Between Pairs of Readers (Interindividual)	Between Readings of Individuals (Intraindividual)
Agreement		
On presence of T.B.	26.7 (24-32)	29.7 (27-31)
On absence of T.B.	50.3 (50-51)	54.7 (52-58)
Disagreement		
On presence of T.B.	12.0 (6-15)	4.7 (4-6)
As percentage of all films	13.5 (6.7-16.9)	5.2 (4.5-6.7)
As percentage of films called positive at least once	31.0 (15.8-38.5)	13.6 (11.4-16.2)

The mean number of interindividual disagreements on "T. B. present" for the British readers in their first sets of readings was 7.7%, taking all 89 films into consideration, or 23.2% if the films called "T. B. negative" on both readings are eliminated. These figures are slightly lower than those obtained on American readings. The intraindividual comparisons, however, are about the same as were found for the Americans, with a mean of 3.8 disagreements or 4.3% based on 89 readings, and 13.5% based on only those films called "T. B. positive" by at least one reader.

TABLE 6.—*Average and Range of "Agreement" and "Disagreement" by American Readers on Activity in Films in Which T. B. Is Agreed to Be Present*

	Between Pairs of Readers (Interindividual)	Between Readings of Individuals (Intraindividual)
Agreement		
On presence of T.B.	26.7 (24-32)	29.7 (27-31)
On activity of T.B.	17.3 (16-20)	19.0 (17-23)
On inactivity of T.B.	3.7 (1-7)	8.7 (7-12)
Disagreement		
On presence of T.B.	5.7 (5-7)	2.0 (1-3)
As percentage of no. agreed to show T.B.	21.2 (15.6-29.2)	6.7 (3.2-11.1)
Active T.B. vs. T.B. absent	2.3 (1-5)	1.3 (1-2)

On the other hand, interindividual disagreement on activity (first readings only, tables 3 and 6), although surprisingly low, was higher for the British than for the American readers. The mean number of disagreements on activity was 8.9, or 39.3%, for the British, as compared with 5.7 or 21.2% on the American first readings. The intraindividual disagreements were also somewhat greater for the British, with a mean of 2.7 or 10.9% for the British, as compared with 2.0 or 6.7% for the Americans. There were fewer complete disagreements by the British readers (that is, one reader reporting "active T. B." while the others reported "negative for T. B."); the average was 0.9 for such disagreements for pairs of readers and 0.5 comparing each reader with himself.

In calculating the "misses" by various British readers of films called "T. B. positive" by one reader, it is evident that films called "active T. B." are less likely to be missed than those called "inactive T. B.," but there is no clear-cut advantage of films called "clinically significant" over those called "not clinically significant" in the British readings; some advantage in this respect was found in the American readings.

In cross-comparison between British and American readers, using first readings only, it was found that of 52 films called "T. B. negative" unanimously by the British, 42 were also called negative unanimously by the American readers; 6 were called "T. B. positive" by one American reader, and 4 were called "T. B. positive" by two American readers. The six films with apparent major disagreement were subsequently studied at joint conference at Cardiff, with the results outlined in table 7. In five cases there proved to be no major disagreement; in one case there was disagreement as a result of a rather difficult lesion.

TABLE 7.—*Analysis of Films on Which British and American Readers Disagreed*

Film No.	Readings During Trial (First and Second Occasions)		Comments at Joint Conference *	Conclusion
	British Readers	American Readers		
1	12 T.B. negative †	3 T.B. negative 3 T.B. positive, inactive	Questionable small scar at right first space, laterally (A). Negative (B).	Understandable difference of opinion on significance of a small opacity. No major disagreement.
2	12 T.B. negative	2 T.B. negative 4 T.B. positive, inactive	Questionable density right first space, laterally (A). Negative (B).	No major disagreement.
3 and 4	12 T.B. negative	2 T.B. negative 4 T.B. positive, inactive (calcified hilar nodes)	Calcified nodes (A). Negative (B).	No major disagreement. American readers coded the nodes; British did not.
5	6 T.B. negative 3 T.B. positive, active 2 T.B. positive, inactive, but clinically significant 1 T.B. positive, inactive, not clinically significant	4 T.B. negative 1 T.B. positive, active 1 T.B. positive, inactive	Faint opacity left first space, possibly active (A). Possible lesion (B).	Difficult case with probable minimal lesion and inevitable difference of opinion amongst different observers. Both groups of readers diverged; no significant international disagreement.
6	9 T.B. negative 2 T.B. positive, active 1 T.B. positive, inactive, but clinically significant	1 T.B. negative 2 T.B. positive 2 T.B. positive, inactive, but clinically significant 1 T.B. positive, inactive and not significant	Lesion, R second rib, dense and probably obsolete; adjacent lesion right 2nd space, soft (active) (A). Negative except for healed primary (B).	Difficult case with small soft lesion overshadowed by adjacent small, dense one. Subsequent review by independent British consultant reported "positive and significant."

* A represents an American reader. B represents a British reader.
† That is, of 12 readings, all were recorded as negative.

SUMMARY

A set of 89 selected 14 by 17 in. chest films were read independently twice by each of six British and three American observers. The amount of interindividual and intraindividual disagreement was significant, and was of approximately similar magnitude on each side of the Atlantic. Of the entire 89 films, the number of "positives" selected by the different readers varied from 21 to 34 for the British, and from 28 to 35 for the Americans. Of those interpreted as active, the British range was 5 to 20, and the American 17 to 26.

The percentage disagreement between any pair of readers on interpreting a film as positive was 7.7% for the entire 89 films, or 23.2% of the films called positive, in the case of British readers. The corresponding figures for the American readers were 13.5% and 31.0%. Of 21 films interpreted as "T. B. positive" unanimously by the British readers, 20 were called positive unanimously by the American readers; in the remaining case, two of the American readers interpreted the film as positive. In other words, these films showed lesions of an obvious type, upon which agreement was easy. There were 24 cases interpreted as positive unanimously by the American readers. The following are the British interpretations of the four cases "added" by the Americans: one film had five positive readings; two had three positive readings; and one had two positive readings (film no. 6, table 7). The disagreement on activity in those films interpreted as positive was as follows: interindividual, 39.3% British, 21.2% American; and intraindividual, 10.9% British, 6.7% American. Finally, the mean degree of personal inconsistency in seeing a lesion was for the British, 4.3% of the 89 films, or 13.5% of the films called positive. For the Americans, the corresponding figures were 5.2% and 13.6%, respectively.[7]

CONCLUSION

Observer error in the field of chest roentgenographic interpretation is a significant problem in more than one country. Its recognition is important, and should lead to the development of methods (such as dual reading) by which it may be reduced.

450 Sutter St. (Dr. Garland).

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[7] Since completion of this international trial, we have been notified by Professor Groth-Petersen of Denmark that he found individual variations of the same order of magnitude in Danish tests. He writes, "We knew the result of similar American investigations, but to tell the truth, we had been somewhat skeptical as regards the universal validity of these . . . . . The individual reader (in the Danish tests) has seen an average of 68 "true positive" findings per 100, exactly as in the American investigations (Groth-Petersen, E.; Løvgreen, A., and Thillemann, J.: On the Reliability of the Reading of Photofluorograms and the Value of Dual Reading, Acta tuberc. Scandinav. 26: 13, 1952).

Intestinal Amebiasis.—Intestinal amebiasis is prevalent in at least 10% of the population of this country. The distribution of the infection is determined by conditions of local sanitation rather than by climate. The prevalence is necessarily greater in rural than in urban populations, and the great increase in foreign travel exposes large number of individuals to greater risk of infection than they would normally encounter in the United States. —Thomas T. Mackie, M.D., Chronic Intestinal Amebiasis, *The Journal of the Michigan State Medical Society*, April, 1952.

HEAT SENSITIVITY DUE TO AUTONOMIC DRUGS

Robert E. Litman, M.D., Los Angeles

Sweating is the essential mechanism by which the human body protects itself against the injurious effects of severely elevated environmental temperatures. The experience of the armed forces has shown that in desert and tropical climates a decrease in the ability to sweat is associated with a syndrome of weakness, lassitude, and increased heat sensitivity.[1] Under such conditions a complete failure of sweating is followed inevitably by hyperpyrexia, which may be fatal. In many American cities heat stroke becomes an important problem during prolonged midsummer "heat waves." Almost all patients admitted to city hospitals because of hyperpyrexia give a history of a sudden cessation of sweating immediately preceding their collapse.[2] Apparently the essential feature of heat stroke is an acute derangement of the sweating mechanism. Authorities agree that any disease of the central nervous system gravely increases susceptibility to heat pyrexia. Such predisposing factors as extremes of age, alcoholism, and chronic neurological disorders have long been recognized. It seems likely that drugs that tend to inhibit sweating also increase sensitivity to heat. This was pointed out in 1920 by Wilcox, who warned against the use of atropine by military personnel stationed in the Middle East, because of its anhidrotic action.[3] For years atropine and related alkaloids have been used to ameliorate the symptoms of Parkinsonism. During one therapeutic phase, now past, the dosage of these potent drugs was pushed higher and higher (sometimes to 50 mg. of atropine daily), so that maximal benefit might be obtained. Under such circumstances hyperpyrexia would develop in whole wards of patients simultaneously in hot weather.[4] Reports of large numbers of patients treated with mixtures of belladonna alkaloids, even in moderate doses, often include a reference to severe or fatal cases of heat stroke complicating therapy.[5] Attempts have been made to discover drugs that duplicate the favorable antispasmodic action of atropine without the distressing side-effects, such as inhibition of secretions. Two preparations that have been recommended as therapeutically beneficial with minimal side effects are 3-(1-piperidyl)-1-phenyl-1-cyclohephyl-1-propanol (artane®) hydrochloride, a synthetic antispasmodic, and diphenhydramine (benadryl®) hydrochloride, an antihistaminic drug. I wish to report observations on the effect of these drugs on sweating in patients afflicted with Parkinsonism, as compared to the effect of rabellon,® a mixture of belladonna alkaloids.

Sweating was induced in the patients by heating them under electric bakers according to the method of List and Peet.[6] Moisture was rendered clearly visible by the starch iodine method of Minor, and the rate and amount of sweating were carefully recorded. With constant environmental conditions, test-retest consistency at one week intervals was satisfactory. (This had been determined previously on normal subjects.) Under observation were 19 patients, all ambulatory, all males, and all suffering from Parkinson's disease. All but three were between the ages of 52 and 65. The patients were tested repeatedly with and without medication, until a total of 62 tests had been performed. It became evident that, in order to evaluate the actions of the drugs properly, the patients must be considered in two categories. Group 1 comprised 15 patients with a variety of autonomic disorders but with no hypohidrosis. In this group, on the contrary, hypersecretion was a great nuisance to many of the patients, who welcomed any decrease in sweating induced by medication. Group 2 included four patients who had mild to severe hypohidrosis even without medication. The observations are tabulated in the table.

*Anhidrotic Effect of Drugs on Patients with Parkinsonism**

Drug	Dose per Day	Group 1, 15 Patients	Group 2, 4 Patients
Rabellon®............	Less than 3.0 mg.	+ + + 0 0	+ +
Rabellon®............	More than 3.0 mg.	+ + + + + 0	+
Artane®..............	Less than 20 mg.	+ 0 0 0 0	+
Artane®..............	More than 25 mg.	+ + + + 0 0	+
Diphenhydramine.....	200-250 mg.	+ + 0 0 0 0	+ +
Diphenhydramine.....	50 mg. (IV)	+ +	+

* + indicates a definite reduction in sweating, and 0 indicates no substantial change in sweating.

In the patients of group 1, both artane® and diphenhydramine tended to inhibit sweating, although the action was less marked than that of rabellon.® The anhidrotic effect paralleled the decrease in salivary secretion, although reduced sweating often appeared before the patient complained of dryness of the mouth. In the patients of group 2, all of the drugs caused a drastic reduction in sweating, frequently associated with alarming hyperthermic responses to the heat test.

REPORT OF CASES

Case 1.—A 56-year-old farmer had had influenza in 1925, followed by progressive weakness and rigidity. An examination of the patient in 1950 revealed irregular pupils, thick speech, immobile facial expression, much rigidity, and slight tremor. He was also mildly constipated, and urinated four times nightly. The patient stated that he now sweated less than he had before and was fatigued, depressed, and uncomfortable during hot weather. In testing without drugs, he spent 30 minutes under the electric bakers without great discomfort, though his sweating was definitely less than normal. When he was receiving artane,® 30 mg. daily, sweating was almost absent. The heating test was discontinued after 26 minutes because of tachycardia (pulse rate 140), the patient's complaint of weakness and headache, and a rise in rectal temperature to 101.6 F (38.7 C).

From the Division of Neurology of the University of Minnesota Medical School.

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2. Ferris, E. B., Jr.; Blankenhorn, M. A.; Robinson, H. W., and Cullen, G. E.: Heat Stroke: Clinical and Chemical Observations on 44 Cases, J. Clin. Investigation **17:** 249, 1938.

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4. Jewett, S. P.; Rosow, H. M., and Pumpian-Mindlin, E.: High Dosage Atropine Therapy in Chronic Encephalitic Parkinsonism, Am. J. M. Sc. **195:** 809, 1938. Hall, A. J.: The Results of High Atropine Dosage in Chronic Epidemic Encephalitis, with Comments, Brit. M. J. **1:** 795, 1937.

5. Price, J. C., and Merritt, H. H.: The Treatment of Parkinsonism: Results Obtained with Wine of Bulgarian Belladonna and Alkaloids of U. S. P. Belladonna, J. A. M. A. **117:** 335 (Aug. 2) 1941. Benda, C. E., and Cobb, S.: On the Pathogenesis of Paralysis Agitans (Parkinson's Disease), Medicine **21:** 95, 1942.

6. List, C. F., and Peet, M. M.: Sweat Secretion in Man: Sweating Responses in Normal Persons, Arch. Neurol. & Psychiat. **39:** 1228 (June) 1938.

CASE 2.—A 58-year-old postmaster had had influenza in 1919. His present illness began in 1927 with weakness, vague pains, and gradually increasing stiffness. He was also suffering from constipation and increased frequency of urination. Examination demonstrated an immobile facial expression, a propulsive gait, and a weak voice. Sweating, though sluggish, was still in the low normal range without medication. After he was given 50 mg. of benadryl® intravenously over a period of five minutes, he had little or no sweating. The heat test was discontinued after 20 minutes because the patient's rectal temperature reached 101.5 F (38.6 C).

COMMENT

It is evident that both artane® and diphenhydramine tend to inhibit sweating, which is in accordance with previous experience with these drugs. In pharmacologic studies on animals, Cunningham's group found that artane,® in comparison with atropine, has one-third as great a mydriatic action and one-eighth as much antisialogogic potency.[7] Diphenhydramine has structural similarities to atropine,[8] and toxic hyperpyrexia due to diphenhydramine has occurred with symptoms duplicating those of atropine poisoning.[9]

The mechanism of the antisecretory activity is by no means clear, even with respect to atropine, a drug that has been studied extensively. Peripherally, atropine blocks the response of cholinergic end organs, and it also has a very important but poorly understood central action. Because the sweat glands not only are vulnerable to cholinergic blocking drugs but also are inhibited by agents that interrupt the sympathetic nerves and ganglions, decreased sweating may result from the action of N,N-dibenzyl-β-chloroethylamine (dibenamine®), tetraethyl ammonium (etamon®) chloride, methantheline (banthine®) bromide, and 2-benzyl-2-imidazoline (priscoline®) hydrochloride. Various other antispasmodics and possibly several of the antihistaminics may have the same anhidrotic action.

Drugs that tend to inhibit sweating should be dispensed with care during hot weather. This warning applies especially to patients with disease of the central nervous system, the aged, alcoholics, and the chronically ill. It also applies to ambulatory persons who may have to do heavy work in a hot climate. Further, the anhidrotic effect of atropine-like drugs is greatest in persons in whom there already exists some derangement of sweating.

CONCLUSIONS

Under circumstances of elevated environmental temperatures, sweating protects the body against hyperthermia. Many recently developed drugs tend to inhibit sweating. Such antispasmodic and antihistaminic preparations should be used with caution in patients exposed to extremes of heat; otherwise heat stroke may result.

7960 Fareholm Dr.

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[7] Cunningham, R. W., and others: The Pharmacology of 3-(N-Piperidyl)-1 Phenyl-1-Cyclo-Hexyl-1-Propanol HCL (Artane) and Related Compounds: New Antispasmodic Agents, J. Pharmacol. & Exper. Therap. **96**: 151, 1949.

[8] Gair, D. S., and Ducey, J.: Chemical Structure of Substances Effective in Treatment of Parkinsonism, Arch. Int. Med. **85**: 284 (Feb.) 1950.

[9] Sachs, B. A.: The Toxicity of Benadryl: Report of Case and Review of Literature, Ann. Int. Med. **29**: 135, 1948.

RHEUMATIC FEVER PROPHYLAXIS

A COMMUNITY PROGRAM THROUGH THE PRIVATE PHYSICIAN

Mary Alice Smith, M.D., Anton R. Fried, M.D., Ernest M. Morris, M.D., Lewis C. Robbins, M.D.
and
William J. Zukel, M.D., Newton, Mass.

A child is a rheumatic child because of hereditary and environmental factors. He cannot be genetically altered, and seldom can his environment be altered to approach the ideal. He is well but possesses a peculiar vulnerability and tissue reactivity to certain streptococcic infections. If the infection could be prevented or stopped before tissue reactivity begins, he would remain normal.

The rheumatic child is hidden among our national citizenry. His first streptococcic infection may or may not bring him in contact with his family physician, who may give treatment to prevent a possible attack of rheumatic fever. Once rheumatic fever has developed, subsequent devastating bouts are likely to occur. It then becomes the physician's responsibility to establish all possible safeguards before, during, and after rheumatic episodes. To discharge this responsibility, many private physicians of Newton, Mass., began daily oral administration of penicillin to rheumatic children.

It is the purpose of this paper to show the development of a rheumatic fever prevention program in which the private physician plays the major role. The program shortened the time between the discovery that penicillin should prevent rheumatic fever attacks and the widespread application of this knowledge in Newton, a community of 85,000 population.

DEVELOPMENT OF A COMMUNITY PROGRAM

Three years ago, the Public Health Service, with the cooperation of the Massachusetts and Newton health departments, and with the endorsement of the Newton Medical Club, established the Newton Heart Demonstration Program. At the request of the medical club, a committee of six staff members of Newton-Wellesley Hospital was organized to act in an advisory capacity for the heart program.

The need for rheumatic fever prophylaxis was first considered by the Cardiac Program Committee (the local advisory group for the Newton Heart Demonstration

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Medical Officer in Charge, Newton Heart Demonstration Program, Public Health Service (Dr. Smith); Chairman, Subcommittee on Rheumatic Fever, Cardiac Program Committee, and Former Chief of Medical Service, Newton-Wellesley Hospital (Dr. Fried); Director of Public Health, Newton Health Department (Dr. Morris); and Former Medical Officer in Charge, Newton Heart Demonstration Program, Public Health Service (Drs. Robbins and Zukel).

Program) at its regular monthly meeting in December, 1949. There was some question at first as to how much rheumatic fever there was in Newton. A later telephone survey of family physicians revealed that 45 of the 80 patients listed in the Handicapped Children's File of the Newton Health Department were known to have had an onset or a recurrence of their disease since 1945. Only a very few of these patients had received antibiotics to prevent further attacks. Acting on this information, the Cardiac Program Committee sought from Dr. T. Duckett Jones[1] an authoritative schedule for rheumatic fever prophylaxis; through Dr. Jones, Dr. Benedict Massell[2] provided us with the schedule shown in table 1.

Briefly, to prevent a recurrence, the schedule recommended that a patient who had had an attack of rheumatic fever within five years should take three 100,000 unit tablets of penicillin orally each day, at least three-quarters of an hour before a meal or two hours after meals; a person having a suspected streptococcic infection should receive large doses of penicillin for 10 days, and, if he is a member of a family in which there is rheumatic fever, all other persons should simultaneously receive prophylactic doses of three 100,000 unit tablets orally each day for 10 days.

On receipt of the schedule, our next problem was to disseminate this information. Fortunately, a regular "teaching session" of the Newton Postgraduate Heart Institute, to which all Newton physicians are invited, could be turned over to the chairman of the Rheumatic Fever Subcommittee of the Cardiac Program Committee. He introduced Drs. Jones and Massell, who discussed the need for rheumatic fever prophylaxis and the use of the penicillin schedule. At this meeting, the doctors expressed many opinions, for example: 1. Penicillin is too expensive for such widespread use. 2. If all patients presenting the suggested criteria for possible streptococcic infections were to receive penicillin, far more would be treated than would be justified by the prevention of rheumatic fever, a relatively infrequent disease. 3. Many patients do not bother to come to the doctor for a mere sore throat, so that treating streptococcic infections early is difficult. These points appeared to be valid and influenced the planning of a practical program.

LOW COST PENICILLIN

As a result of this meeting, a new interest in the problem was developed. To overcome one of the formidable barriers, low cost penicillin (and free penicillin for those unable to pay) was made available for Newton patients with rheumatic fever and their families through the Newton Health Department.[3] All doctors practicing in Newton received a schedule and an announcement that their Newton patients with rheumatic fever could get this low cost penicillin on their prescription.

ATTEMPTS TO HAVE THE SCHEDULE USED

How best to acquaint and obtain the cooperation of some 100 physicians practicing in Newton required considerable thought. It was felt that doctor cooperation could best be assured by private letters, telephone calls, and visits by a heart program medical officer. Obviously the schedule had to be prescribed by the physician, but, before this could be done, it was vitally important to get the patients to go to their doctors. Since it was felt the doctors might hesitate to call in their patients themselves, the Director of Public Health sent directive letters to all patients listed in the Handicapped Children's File.

As an aid for making accurate diagnoses, all the physicians received a reprint of an article by Dr. T. Duckett Jones.[4] This article suggests that (1) carditis, arthralgia, chorea, subcutaneous nodules, and a history of a previous attack be considered as major manifestations of the disease; (2) fever, abdominal pain, precordial pain, rashes (erythema marginatum), epistaxis, pulmonary findings, and laboratory findings (microcytic anemia, leukocytosis, and increased sedimentation rate) be considered minor manifestations; (3) the diagnosis be considered definite when two major, or one major and two minor, manifestations were present; and (4) the diagnosis be considered probable when fewer than these criteria were present and the attending physician felt it should be considered rheumatic fever.

TABLE 1.—*Penicillin Prophylaxis Schedule for Rheumatic Fever*

Persons Needing Protection	Recommended Schedule
The Rheumatic Fever Family	
1. The patient with inactive rheumatic fever	Continuous daily prophylactic therapy for five years from date of last attack (course A) *
2. (*a*) Any other member of family (parent or sibling) with suspected † or proved streptococcic infection, and	Course B for 10 days
(*b*) Simultaneously all other members of family	Course A for 10 days
Advisable but probably not always possible	
The Nonrheumatic Family	
1. Any member with suspected or proved streptococcic infection	Course B for 10 days
2. Any others exposed to streptococcic infection	Course A for 10 days (so that no one in the family will continue to carry the organism)

Penicillin course A:	(prophylactic treatment) 1 tablet penicillin, 100,000 units, three times daily, orally, on arising, one hour before lunch, and at bedtime
Penicillin course B:	(for treatment of streptococcic infections) 2 tablets (100,000 units each) five times a day for five days, then 3 tablets (100,000 units each) three times a day for five days; a daily intramuscular injection of procaine penicillin, 300,000 units, may be substituted for any day of oral penicillin therapy

Oral penicillin loses effect when mixed with food. The tablets should be given at least 45 minutes before or 3 hours after meals.

* Any febrile illness in a patient receiving this much penicillin daily will not be benefited by increased penicillin therapy. A throat culture should be taken and appropriate therapy given.

† Criteria for Diagnosis of Suspected Streptococcic Infections: All respiratory infections in which the throat is red or sore, or has exudate, or otitis is present, or cervical adenitis is present, and the temperature is 100 F orally or more, or 101 F rectally or more.

Addenda: (*a*) All suspected cases of scarlet fever should be included.
(*b*) Head colds and colds with cough as an outstanding symptom are usually not streptococcic.

SCHOOL SURVEY FOR CASE FINDING

It was believed that the small group of 80 patients listed in the Handicapped Children's File represented a small percentage of the total patients with rheumatic fever in Newton. Inasmuch as the majority of rheumatic fever attacks occur between ages 5 and 15, the schools seemed to be the logical place for case finding. With physician approval and the cooperation of the Newton public and parochial schools, a plan was evolved to distribute a survey form (table 2) to the parents of 14,000 school-age children. The parent or guardian was requested to indicate on the survey form whether there was a history of rheumatic fever in the family and, if so, to give the names of the persons so affected and the name of their family doctor. Approximately 85% of these forms were returned by the parents, and of these there were 379 families in which parents said there had been a history of rheumatic fever. To check the reliability of this information, letters were sent to the doctors mentioned by the parents for their verification of the diagnosis, and it was found that in 214 families there was a rheumatic fever history, in 86 families there was no such history, and in 55 other families the doctors did not know; data could not be obtained about 24 families. When the request for this information was made to the physicians, approval was also sought to send a form letter to urge the parents to consult them (the physicians) for guidance in rheumatic fever prevention.

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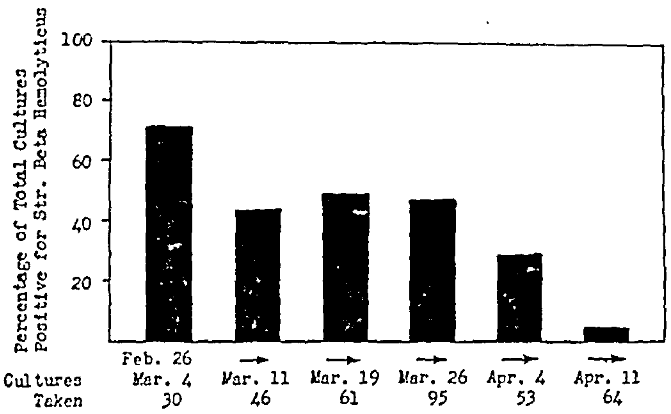
[1] Director of Helen Hay Whitney Foundation, and Chairman of American Council on Rheumatic Fever, American Heart Association.

[2] *Acting Director of House of* Good Samaritan, *Boston.*

[3] To simplify the procedures of purchasing and dispensing penicillin, it was necessary to establish a revolving fund in order that the money taken in by the purchase of penicillin could be turned back for the purchase of more penicillin.

[4] Jones, T. D.: Diagnosis of Rheumatic Fever, J. A. M. A. 126:481 (Oct. 21) 1944.



Percentage of throat cultures positive for Str. beta hemolyticus from Feb. 26 to April 11, 1950. Cultures (total, 349) were taken by private physicians on patients who had clinically suspected streptococcal infections. They were taken by the dry swab method and were delivered to the hospital within 15 hours of being taken.

PREVALENCE OF STREPTOCOCCI IN NEWTON

The basis for rheumatic fever prevention lies in the fact that the beta hemolytic Streptococcus is involved in the initiation of the rheumatic fever attack. To determine roughly the prevalence of streptococci in the community, private physicians took throat cultures of patients with clinically suspected streptococcic infections, and the cultures were made by Newton-Wellesley Hospital (Dr. David Skinner, pathologist). A high percentage of the cultures taken in late February and early March were positive for beta hemolytic Streptococcus, and in April the percentage was much lower, as may be seen in the accompanying figure. We made no attempt to correlate the presence of streptococci with clinical disease.

PRELIMINARY EVALUATION STUDIES

Because this appeared to be the first community program in which the family physicians were taking an active part in rheumatic fever prevention, it was felt that a great deal could be learned from interviews with the physicians themselves; also with physician approval, the parents of 30 patients with rheumatic fever were visited by two medical students [5] to determine how closely the details of the penicillin schedule were followed and what difficulties were encountered. A summary of information obtained in these interviews follows.

No attacks of rheumatic fever have occurred in patients receiving penicillin prophylaxis as of the date of this report (Sept. 1, 1951). Most of these patients received treatment for such a brief period of time (one year or less) that it would be fallacious to imply by this study that no recurrences will take place.

Table 2.—*Newton Health Department Rheumatic Fever Survey*

Dear Parents:

The Newton Health Department, in cooperation with the Cardiac Program Committee, is making a survey of the number of families in which a case of rheumatic fever has ever occurred.

The reason for this survey is to bring to you and your family through your doctor new information concerning the prevention of rheumatic fever and rheumatic heart disease.

Please fill in the items below and return to the school immediately:

Have any of your children or either parent ever been diagnosed as having rheumatic fever (not "rheumatism")?

Yes.................. No..................

If "Yes," please answer the following:

1. Name ....
   Address ....
2. Name of your doctor..
3. Number of children in family................................
4. Names of children or parents who have had rheumatic fever:
   ....
   ....
   ....
   ....

....
Signature of parent or guardian

There were no sensitivity reactions in patients receiving penicillin orally for rheumatic fever prevention. Others [6] have felt that this method of administration is the least likely to give reactions.

In January, 1950, only 7 of the 45 (16%) Newton residents known to have had a rheumatic fever attack within five years were receiving antibacterial agents to prevent recurrences (five patients took sulfonamide drugs daily; one took penicillin daily; one received immediate therapy for streptococcic infection). In April, 1951, 51 of 64 (80%) children known to have rheumatic fever who had had attacks within five years were receiving antibacterial agents to prevent recurrences (48 receive penicillin orally each day; three receive sulfonamide drugs because of sensitivity to penicillin).

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[5] Robert L. Early and Alfred L. Skinner, Harvard Medical School. 1951.

[6] Keefer, C. S.: Dosage Forms of Penicillin for Systemic Infections, Am. J. Med. 7:216, 1949. Robinson, J. A.; Hirsh, H. L., and Dowling, H. F.: Oral Penicillin in Treatment of Various Bacterial Infections, Am. J. Med. 4:716, 1948.

A digest of the information collected from the parents reveals that, in the majority of cases, penicillin was taken regularly and at the proper times. "Human elements" were found to explain some of the failures. Taking the morning dose three-quarters of an hour before breakfast was difficult for many. In order to keep the proper schedule, two parents arranged with teachers to give the child his tablet before dismissal at lunch time.

Although the children were developing the habit of taking penicillin orally each day, the parents felt that forgetfulness was the commonest reason for omitting a dose. There was no need noted by these parents for any "bribe," and the taking of penicillin seemed rather on a "matter of fact" basis. Many parents remarked that the general health of their children was improved. Several reported better weight gain and better dispositions. All the parents interviewed seemed to appreciate the attempts made to protect their children, and most were extremely enthusiastic about the program.

SUMMARY

Through the efforts of private physicians practicing in the city of Newton, Mass., many patients with rheumatic fever and members of their families have received penicillin to prevent attacks of rheumatic fever. The time between the acquisition of knowledge and its useful application has been shortened. An active program for rheumatic fever prevention has been developed. The physicians have given penicillin orally to rheumatic patients who have had an attack of this disease within the past five years, and they have given immediate penicillin therapy for possible streptococcic infections in members of rheumatic and nonrheumatic families.

This preliminary report indicates that the local physicians have cooperatively developed a comprehensive program on a community basis. It is hoped that a later reevaluation will reveal effective progress in the prevention of rheumatic heart disease.

Commonwealth Ave. and Walnut St. (Dr. Morris).

ESOPHAGOSCOPY IN ESOPHAGOGASTROINTESTINAL HEMORRHAGE

Gerard Desforges, M.D., Fred H. Aves, M.D.
and
John W. Strieder, M.D., Boston

The persistent admonitions of modern medical textbooks [1] and recent articles [2] against the use of the esophagoscope, or their consistent failure to mention the esophagoscope as a diagnostic aid in acute esophagogastrointestinal hemorrhage, have prompted us to record recent experience with this instrument in diagnosis. When esophageal pathological changes or bleeding in a portion of stomach herniated through an enlarged esophageal hiatus have been ruled out, one can be reasonably certain that the source of bleeding will be found in the stomach or in the first or second portions of the duodenum. The experience at the Boston City Hospital and at other places [3] indicates that gastroduodenal bleeding may frequently be dealt with surgically. Surgery directed at the stomach in the face of hemorrhage from esophageal varices, however, is usually futile and often fatal.

CLINICAL MATERIAL

The group of patients described here (see the accompanying table) comprises those who at the time of esophagoscopy were bleeding from some type of upper esophagogastrointestinal lesion. They represent experiences during the period from July 1, 1950, to June 1, 1951. During this time, also, our interest was renewed in esophageal tamponage measures for control of bleeding varices. Availability of the Sengstaken-Blakemore double balloon tube [4] stimulated this interest. As time passed, the placing of the balloon was utilized as a therapeutic test. However, this procedure is not without danger, and some of its complications will be discussed.

TECHNIQUE

In almost all cases the basal sedation that the patient is already receiving for the control of apprehension proves adequate. The most important preliminary measure is Jackson's "sermon on relaxation," [5] with a comprehensible explanation of the procedure to the patient. The presence of intravenous infusion apparatus in no way interferes with the procedure. Oxygen may be administered simultaneously by the intranasal route. Topical anesthesia is effected by means of 2% tetracaine hydrochloride solution administered in small multiple doses by atomizer spray, no more than 3 cc. being used. If the patient is instructed to swirl these small amounts about his mouth for several minutes after each application and then swallow it, this quantity usually suffices. The pyriform sinuses are tested with pledgets of cotton on laryngeal forceps dipped in 2% tetracaine hydrochloride solution. The pledgets are held in each sinus for approximately 15 seconds. This method provides excellent anesthesia for esophagoscopic instrumentation, and it was used in every case except one in this series. The one exception was a cirrhotic woman of very excitable nature who insisted on general anesthesia. The most important and often the most difficult part of the procedure is satisfactory positioning of the patient for the

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From the Thoracic Surgery Service, Boston City Hospital.

Teaching Resident, First Surgical (Tufts) Service, Boston City Hospital (Dr. Desforges); Formerly Chief Resident, Thoracic Surgery, Boston City Hospital (Dr. Aves); Professor of Clinical Surgery, Boston University, and Surgeon-in-Chief of Thoracic Surgery, Boston City Hospital (Dr. Strieder).

1. Harrison, T. R., and others, editors: Principles of Internal Medicine, Philadelphia, The Blakiston Company, 1950, pp. 1433-1435. Cecil, R. L.; McDermott, W., and Wolff, H. G., editors: A Textbook of Medicine, ed. 7, Philadelphia, W. B. Saunders Company, 1947, p. 758. Osler, W.: The Principles and Practice of Medicine: Designed for the Use of Practitioners and Students of Medicine by Henry A. Christian, ed. 16, New York, D. Appleton-Century Company, Inc., 1947, p. 638.

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3. Welch, C. E.: Treatment of Acute, Massive Gastroduodenal Hemorrhage, J. A. M. A. **141**: 1113-1119 (Dec. 17) 1949. Warthin, T. A.; Warren, R., and Wissing, E. G.: Combined Medical and Surgical Management of Upper Gastrointestinal Hemorrhage, New England J. Med. **241**: 473-478, 1949. Sullens, W. E.; Steigmann, F., and Meyer, K. A.: Surgical Considerations in Hemorrhage of the Upper Part of the Gastrointestinal Tract, Arch. Surg. **59**: 1244-1260 (Dec.) 1949.

4. Sengstaken, R. W., and Blakemore, A. H.: Balloon Tamponage for the Control of Hemorrhage from Esophageal Varices, Ann. Surg. 781-789, 1950.

passage of the esophagoscope. If the patient is able to relax, this can be accomplished readily, but it is useless to begin the procedure before this relaxation has been accomplished. The actual passage of the esophagoscope is somewhat complicated in the seriously bleeding patient because of the initial welling up of blood when the cricopharyngeal pinchcock is traversed. At this point efficient suction apparatus with an atraumatic tip is mandatory. The remainder of the procedure consists in carrying out the manipulations in as dry a field as possible. Since the esophagoscope cannot safely be passed blindly through a field obscured by blood, frequent aspiration is necessary during the descent of the instrument. When one is dealing with bleeding varices, it is usually easier to identify the point of hemorrhage on withdrawal of the esophagoscope, because during its insertion the instrument itself acts as a tampon. After the bleeding area is passed, one can observe a clear and empty viscus immediately ahead. Then, on withdrawal, the exact bleeding point is readily apparent. In our experiences such an examination may be accomplished within three to five minutes from the beginning of the passage of the esophagoscope.

Pertinent Laboratory and

Case No.	Age, Yr.	Sex	Duration of Bleeding Prior to Admission	Hematocrit or Hemoglobin, Blood Pressure, Pulse Rate	History	Evidence of Hepatomegaly †	Liver Disease Sulfobromophthalein Retention ‡	Results of Gastrointestinal Studies ‡
1	72	F	5 hr.	22, 150/80, 80	Noncontributory	NP	18%	Patient could not cooperate
2	50	F	.....	10.9 gm., 120/80, 108	Admission with pneumonia; hematemesis on 8th hospital day; chronic alcoholic	5	....	....
3	72	M	.....	29, 100/50, 120	Pain from right-sided cerebrovascular accident on admission; hematemesis on 4th hospital day	1½	20%	Periduodenal adhesions
4	60	M	1 day	15, 120/80, 80	Chronic alcoholic	NP	15.3%	Hiatus hernia
5	63	M	2 days	17, 108/90, 90	Known cirrhotic	3	15.7%	Chronic duodenal ulcer
6	35	F	1 day	8, 75/20, 140	Known cirrhotic	2	24%	Chronic duodenal ulcer
7	49	M	1 hr.	48, 120/100, 110	Known ulcer, alcohol (?) ingestion	NP	....	....
8	65	F	3 days	4.7 gm., 130/60, 120	Tarry stool 3 days prior to admission	NP	36%	Esophagitis (?); esophageal ulcer (?)
9	42	M	1 hr.	23, 60/40, 92	Chronic alcoholic	3	....	....
10	32	M	12 hr.	34, 130/70, 120	Chronic alcoholic	5	30%	Esophageal varices; gastritis
11	57	M	3 hr.	38, 90/50, 80	Dysphagia; previous hematemesis and inoperable carcinoma of esophagus	NP	....	Chronic duodenal scar
12	58	F	1 day	28, 106/64, 96	Anorexia for 2 yr. prior to admission	4	16%	Esophageal varices
13	51	M	12 hr.	9.4 gm., 130/90, 96	Ulcer history; duodenal ulcer and hiatus hernia by previous gastrointestinal study	NP	6%	Duodenal ulcer; gastritis
14	46	M	2 hr.	29, 114/80, 108	Known cirrhotic	2	8%	Esophagitis; gastritis
15	71	F	7 days	8.3 gm., 100/70, 100	Known cirrhotic	NP	16%	Extrinsic pressure on duodenum
16	55	F	.....	15 gm., 110/60, 120	Admitted with leg ulcer; hematemesis on 3rd hospital day; chronic alcoholic	NP	....	....
17	62	M	1½ hr.	25, 115/60, 84	Known cirrhotic	5	16%	Varices; gastric ulcer (?)
18	60	M	.....	13.5 gm., 180/70, 72	Admission with a suprapubic mass; hematemesis on 3rd hospital day	NP	....	....
19	66	F	3 hr.	17, 100/70, 100	Ulcer history; hemochromatosis (?)	NP	....	Prepyloric ulcer; duodenal ulcer
20	49	M	12 hr.	27, 92/50, 134	Chronic alcoholic	3	30%	....

* Anesthesia was general in case 6 and topical in all others. There were no complications from esophagoscopy in any of the cases.

ANALYSIS OF CASES

The accompanying table summarizes the pertinent data on the 20 patients comprising this study. There were 12 men and 8 women, ranging in age from 32 to

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5. Jackson, C., and Jackson, C. L.: Diseases of the Nose, Throat, and Ear: Including Esophagoscopy and Bronchoscopy, Philadelphia, W. B. Saunders Company, 1945, pp. 433-435.

72 years. Direct visualization of the esophagus excluded the diagnosis of varices in 10 patients (cases 3, 4, 7, 8, 11, 13, 15, 16, 18, and 19). One of these (case 11) was shown to have active arterial bleeding from an esophageal carcinoma, and another (case 15) presented the friable mucosa of chronic esophagitis in the lower third of the esophagus. A third patient of this group (case 8) was found to have some irregularity of the esophageal mucosa but no varices and no bleeding point. Examination was impossible in one patient (case 10) because of the onset of delirium tremens. The nine remaining patients (cases 1, 2, 5, 6, 9, 12, 14, 17, and 20) were shown to have varices, and points of active bleeding from these varices were demonstrable in four (cases 2, 9, 14, and 20). Surprisingly enough, in four patients (cases 2, 3, 16, and 18) of the group reported here, the onset of hematemesis occurred eight, four, three, and three days, respectively, after admission to the hospital for disease other than of the gastrointestinal tract. The remaining 16 patients had the onset of their bleeding from seven days to one hour prior to admission. The hematocrit or hemoglobin values in almost all these patients indicated severe blood loss, and the blood pressure and pulse measurements were moderately to mark-

*Clinical Data in Series Reported**

Time of Esophagoscopy After Admission	Esophagoscopy Findings	Place of Examination	Therapy	Outcome	Final Diagnoses
2 days	Varices seen	Operating room	Subtotal gastrectomy	Death within 24 hr. of continued bleeding	Esophageal varices with rupture; Laennec's cirrhosis (autopsy)
8 days	Bleeding varices seen	Bedside	Oxycel® packing	Bleeding controlled; death from hepatic coma 1 mo. after admission	Laennec's cirrhosis; bilateral bronchopneumonia; esophageal varices
4 days	Negative	Bedside	Transfusions	Death from pneumonia 2 days after onset of bleeding	Bronchopneumonia; carcinoma of prostate (autopsy)
2 days	Fresh blood; no varices seen	Operating room	Esophagogastrectomy	Death 7 days postoperatively	Bleeding gastric ulcer; postoperative jaundice type (?)
1 day	Varices seen	Operating room	Subtotal gastrectomy	Death 2 days postoperatively	Bleeding varices; Laennec's cirrhosis (autopsy)
10 days	Varices seen	Operating room	Splenorectal shunt; esophagogastrectomy	Death 5 weeks postoperatively	Laennec's cirrhosis
2 days	Negative	Operating room	Subtotal gastrectomy	Convalescence uneventful	Bleeding duodenal ulcer
2 days	Mucosal irregularity	Operating room	Transfusions	Death on 3rd hospital day with glycosuria and fasting blood of 425 mg. sugar level	Diabetes mellitus (?) and coma; bilateral bronchopneumonia
1 day	Bleeding varices seen	Bedside	Oxycel® packing; balloon tamponage	Death 3 days after admission; pulled tube out	Laennec's cirrhosis; bleeding varices
2 days	Examination stopped; patient uncooperative	Bedside	Balloon tamponage	Death 7 days after admission in coma	Laennec's cirrhosis; bleeding varices
1 day	Bleeding from carcinoma of esophagus	Bedside	Oxycel® packing	Death 2 days after admission with uncontrolled bleeding	Bleeding carcinoma of esophagus
12 days	Varices seen	Operating room	Balloon tamponage; esophagogastrectomy; splenectomy	Death 7 weeks postoperatively	Laennec's cirrhosis; esophageal varices; pylephlebitis (autopsy)
1 day	Negative	Operating room	Subtotal gastrectomy	Convalescence uneventful	Bleeding duodenal ulcer
13 hr.	Bleeding varices seen	Bedside	Oxycel® packing; balloon tamponage	Bleeding controlled; convalescence uneventful	Laennec's cirrhosis; bleeding varices
18 days	Esophagitis, distal third	Operating room	Exploratory laparotomy	Convalescence uneventful	Esophagitis, distal third
3 days	Negative	Bedside	Transfusions	Cerebral damage after bleeding	Bleeding peptic ulcer (?)
7 hr.	Varices seen	Operating room	Balloon tamponage; esophagogastrectomy; splenectomy	Death from gastrointestinal bleeding 3 weeks after operation	Laennec's cirrhosis; gastrointestinal bleeding, cause undetermined
3 days	Negative	Bedside	Transfusions	Death from cerebrovascular accident on day of bleeding	Bleeding peptic ulcer (?) CVA § secondary to anemia
12 days	Negative	Bedside	Subtotal gastrectomy	Death from pulmonary embolus 2 weeks after operation	Bleeding duodenal ulcer
1 hr.	Bleeding varices seen	Bedside	Balloon tamponage	Death 5 days after admission in hepatic coma	Laennec's cirrhosis; bleeding esophageal varices

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† NP, not palpable; figures indicate number of fingerbreadths liver edge was palpated below costal margin.

‡ Where no data appear, the test was not done. § CVA = cerebrovascular accident.

edly abnormal. Of those nine patients who were shown to have varices, seven were known by previous admissions to have cirrhosis of the liver or were, according to their history, severe, chronic alcoholics. In two other patients there was no history of alcohol ingestion and no previously established diagnosis of cirrhosis. Furthermore, one patient (case 15) was known to have cirrhosis of the liver and showed only esophagitis, and another (case 16) was a chronic alcoholic who showed an entirely normal esophagus. Hepatomegaly was present in all cases of bleeding varices except one (case 1). In another patient (case 3) hepatomegaly was present without any concomitant esophageal lesion as demonstrated by autopsy.

The sulfobromophthalein sodium retention test, which has been used extensively at this clinic as a screening measure for persons with serious liver disease and associated bleeding varices,[6] was done in 13 cases. Sulfobromophthalein retention of 15% or greater was obtained in 12 out of the 13 patients. Six out of seven patients among these 13 who had esophagoscopy were shown to have varices. In one instance in which varices were found and sulfobromophthalein retention of less than 15% was obtained, technical considerations were such as to invalidate the procedure. The esophagogastrointestinal barium examination could not be carried out in many of these patients because of their moribund condition. However, taking into consideration observations made on these patients during recent, previous admissions, this examination had indicated the presence of varices in only two of the six patients in whom varices were demonstrable by esophagoscopy. The time of esophagoscopic examination in this series was, for the most part, during the early, active bleeding phase. Several patients (cases 6, 12, 15, and 19) were examined later, however, because of persistent tarry stools following their initial episode of hematemesis. In about half of the cases esophagoscopy was performed in the operating room, and in the others it was performed when the patient was in bed, too ill to be moved. It was never necessary to discontinue other therapeutic measures, such as blood transfusions or nasal oxygen administration, in order to carry out the endoscopy. There were no complications attributable to esophagoscopy in this series. The placing of esophageal oxycel® (absorbable hemostatic) packs was employed in four cases, but it was thought to be of benefit in only one (case 2). The reason for failure was always the early vomiting of the oxycel® tampon. In six instances of bleeding from varices, including the three oxycel®-packing failures, the balloon tampon apparently stopped the bleeding. Two patients (cases 1 and 5) had varices noted by esophagoscopy during their acute bleeding episodes, but no point of active bleeding was found. Because of the possibility that these patients were bleeding from gastroduodenal lesions coincident with the esophageal varices, subtotal gastrectomy was performed. The course in both patients was rapidly downhill, with exsanguination from ruptured varices as proved by autopsy. In two other patients (cases 7 and 13), however, in which no varices were found, subtotal gastrectomy was life saving with the arrest of bleeding from duodenal ulcer craters. In one patient (case 3) no point of bleeding was found during esophagoscopy or later at autopsy. The gravity of prognosis in bleeding from esophageal varices is indicated by the survival of only one of the nine patients in whom this diagnosis was established.

COMMENT

The use of the esophagoscope in the diagnosis of acutely bleeding lesions of the esophagogastrointestinal tract is not new. As early as 1925, Jackson[7] pointed out that inferential methods for determining the source of bleeding in hematemesis are subject to a wide range of error. He also showed that there is little danger associated with esophagoscopy, since the endoscopist is able to see what lies ahead of the tube mouth and the tube is never advanced without visualization of a lumen. However, we are in agreement with Jackson,[7] Schindler,[8] and Carter[9] that experienced, careful, and gentle technique is an absolute necessity in the performance of these examinations. As was previously mentioned, great pains were taken to solicit the cooperation of the patient before the esophagoscopic procedure was started. Ideally, an experienced team of three persons—the operator, the head holder, and an instrument nurse—should be present. The ease, quietness, and efficiency with which such a group does its work not only will increase the confidence of the patient but will shorten the time required for successful examination.

In large municipal institutions, such as the Boston City Hospital, the admission of patients with massive upper esophagogastrointestinal hemorrhage is a frequent occurrence. In addition to saving life, the early establishment of the source of bleeding has several important practical aspects. While the development of the modern blood bank has made the prompt and adequate treatment of blood loss possible, no matter how well stocked the supplies may be, they are not inexhaustible. Furthermore, if several bleeding patients are in the hospital at one time, blood supplies must be carefully husbanded for those whose bleeding cannot be stopped by surgery or tamponage. The exclusion of esophageal varices or bleeding from eroded areas in a hiatus hernia will go far toward establishing the rationale for surgery. As a result of experiences in cases 1 and 5, we feel that esophagoscopic diagnosis of varices in an upper esophagogastrointestinal bleeder is sufficient for immediate balloon tamponage, whether or not a bleeding point is visualized. This procedure establishes quickly by clinical course whether the patient is bleeding from varices or other lesions. However, the use of the balloon before esophagoscopy is indicated only rarely unless there is excellent clinical evidence that varices are present. The placement of the balloon is a somewhat traumatic procedure, because of its large caliber. Its presence in the esophagus, in spite of assiduous efforts to keep the esophageal lumen above free of secretions, many frequently produce diffuse pneumonitis secondary to aspiration of the secretions. An additional complication arises from the inadvertent introduction of liquid feedings into the gastric balloon. This may not be realized at the time, with the result that attempts at removal of the tube may be extremely traumatic. This hazard was well demonstrated in one patient (case 12), who was left with a balloon bezoar in her stomach for three weeks. It was eventually passed rectally.

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[6] Zamcheck, N.; Chalmers, T. C.; White, F. W., and Davidson, C. S.: The Bromsulphalein Test in the Early Diagnosis of Liver Disease in Gross Upper Gastro-Intestinal Hemorrhage, Gastroenterology **14**: 343-363, 1950.

[7] Jackson, C., and others: Hematemesis: A Plea for Objective Methods of Diagnosis, J. A. M. A. **85**: 870-875 (Sept. 19) 1925.

[8] Schindler, R.: Safe Diagnostic Optical Esophagoscope, J. A. M. A. **138**: 885-887 (Nov. 20) 1948.

[9] Carter, M. G., and Zamcheck, N.: Esophagoscopy in Upper Gastro-Intestinal Bleeding, New England J. Med. **242**: 280-283, 1950.

The foregoing discussion is not meant to minimize the importance of balloon tamponage. The purpose is merely to point out that each procedure has its own peculiar hazards. Accordingly, if at all possible, a diagnosis of varices should be established before this procedure is instituted. This diagnosis is impossible on inferential or clinical grounds alone. The pitfalls of the clinical history, physical examination, and laboratory tests are well known to the clinician.

The sulfobromophthalein sodium retention test, particularly as a screening measure, is perhaps the most useful single test of liver functions.[10] In the present series, six out of seven patients with proved varices were correctly screened. The use of this test is recommended. However, it must be carefully performed and interpreted.[6] Finally, the test is not useful in those few patients who have extrahepatic portal obstruction.

The importance of an esophagogastrointestinal barium study in persons with hematemesis has been emphasized by Zamcheck.[11] In one patient of the present series (case 11), however, information from this source was misleading clinically, in that the patient was found to have a chronic duodenal ulcer scar and consequently was treated for peptic ulcer; the patient returned to the hospital seven weeks later with a nonresectable carcinoma of the esophagus. Esophagoscopy at the time of the second entry for hematemesis revealed bleeding from the tumor surface.

SUMMARY

The value of esophagoscopy in upper esophagogastrointestinal bleeding in a series of 20 patients is demonstrated. Pertinent clinical data on these 20 patients, who showed a variety of esophageal, gastric, and duodenal lesions and on whom esophagoscopy was performed during the active phase of bleeding, are presented. Methods available for arriving at a diagnosis and localizing the source of bleeding in patients with hematemesis are discussed. The value of the Sengstaken-Blakemore double balloon esophageal tamponage tube is discussed, together with notations as to the hazards that may accompany its use.

[10] Zamcheck, Chalmers, White, and Davidson.[6] Strade, H. A.; Dotti, L. B., and Ilka, S. J.: A Comparative Study of the Colloidal Red Test in Liver Diseases with Special Reference to the Zinc Turbidity, Thymol Turbidity and Bromsulphalein Tests, Gastroenterology **12**: 934-948, 1949. Cole, W. H., and others: Studies in Postoperative Convalescence, Ann. Surg. **126**: 592-611, 1947. Lavers, G. D., and others: Bromsulfalein Clearance, J. Lab. & Clin. Med. **34**: 965-972, 1949.

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PULMONARY EDEMA IN PATIENTS DYING WITH DISEASE OF THE CENTRAL NERVOUS SYSTEM

Robert Paine, M.D., John R. Smith, M.D.
and
Frank A. Howard, M.D., St. Louis

Various lesions of the central nervous system in man are occasionally complicated by severe acute pulmonary edema. This event has been noted after cerebrovascular accidents, during epileptic seizures, and in other disorders of cerebrospinal function. To the clinicians who were first impressed with the association of such apparently dissimilar conditions, the origin of the pulmonary edema was frankly mystifying. At that time it was perhaps natural to implicate direct neurogenic effects on the lungs, as patients in whom pulmonary edema developed in the course of neurological disease were usually reported to show no evidence of cardiovascular abnormality. In recent years a greater appreciation of the stresses of ordinary living and of disease and a widening field of physiological knowledge have made it possible to evaluate more accurately the impact of various normal and abnormal stresses on circulatory function.[1]

In 1918 Moutier[2] observed a man who had sustained a severe head injury, which was followed by coma, marked hypertension, and a strong pulse. Prior to death of the patient, the course was complicated by acute pulmonary edema. Moutier suggested that death may have resulted less from the cranial trauma than from the effects of neurogenic hyperepinephrinemia, leading to hypertension and deranged pulmonary vasomotion.[3] Vincent and Bernard[4] described cases of encephalitis complicated by acute edema of the lungs. They also noted that injuries of the cervical cord and cerebral trauma led to the complication in patients without evidence of heart disease. In the ensuing years, considerable attention was directed to the question of neurogenic mechanisms in the production of congestion and edema of the lungs, largely in experimental investigation.[5]

From the Cardiovascular Division, Department of Medicine, Washington University School of Medicine and the Barnes Hospital.

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[1] Wolff, H. G.: Life Stress and Cardiovascular Disorders, Circulation **1**: 187, 1950.

[2] Moutier, F.: Hypertension et mort par oedème pulmonaire aigu chez les blessés cranio-encéphaliques (relation de ces faits aux recherches récentes sur les functions des capsules surrénales), Presse méd. **26**: 108, 1918.

[3] Josué, O., and Bloch, L.: Oedème aigu du poumon expérimentale par injection intraveineuse d'extraits de couche corticale de capsules surrénales, Bull. et mém. soc. méd. d. hôp. de Paris **2**: 55, 1908. Petrén, K., and Bergmark, G.: Remarques sur l'oedème aigu du poumon avec hypertension artérielle paroxystique, Arch. d. mal. du cocur **3**: 65, 1910.

[4] Vincent, C., and Bernard, E.: Troubles respiratories dans l'encéphalite, Bull. et mém. Soc. méd. d. hôp. de Paris **46**: 1181, 1926.

[5] Hess, L.: Ueber Lungenödem bei organischen Nervenerkrankungen, Wien. med. Wchnschr. **84**: 285, 1934. Wassermann, S.: Zur Pathogenese des akuten Herzlungenödems, Wien. klin. Wchnschr. **41**: 190, 1928. Hess, L., and Pollak, E.: Ueber zerebrale Atemstörung, Wien. Arch. f. inn. Med. **12**: 477, 1926.

In 1927 Antonini and Biancalani [6] reported a number of cases of traumatic injury of the brain and spinal cord in which severe acute pulmonary edema occurred. Their essay emphasized the importance of the complication. Subsequently, there were several reports, largely by European clinicians, of the occurrence of engorgement and edema of the lungs associated with disease of the central nervous system. These reports included cases of cranial and spinal trauma and cerebral neoplasms and hemorrhage.[7] In these instances pulmonary transudation was thought to have occurred because of direct neurogenic vasodilatation of the pulmonary vasculature. It is of further interest that a number of workers [8] attempted to treat pulmonary edema by surgical or pharmacologic interruption of pulmonary "neurogenic" influences. It was also evident from a number of reports that pulmonary edema occurred purely from disturbances of autonomic function in association with central neural illness (e. g., multiple sclerosis and hypoglycemia [9]). Cooke [10] reported the distressing instance of the use of physostigmine salicylate in a healthy subject for the relief of ureteral colic. After administration of the drug, intense dyspnea occurred, and the patient died with acute pulmonary edema. Adelson and Brunn [11] described two patients with multiple sclerosis who had paroxysms of pulmonary edema in the course of treatment with neostigmine. Evidence suggests that serious physiological disturbances, and sudden death, may follow parasympathetic stimulation even from certain ordinary movements or mild reactions of apprehension. These reactions together with their serious forensic implications have been discussed by Simpson.[12]

This brief literary survey indicates that pulmonary edema may be an important complication of significant neurological disease.[13] Most reported attempts at treatment have been governed by the neurogenic concept of pulmonary edema formation; however, it is well known that acute pulmonary edema is a common and dreaded result of acute myocardial failure. Therefore, one may inquire whether patients exhibiting neurological disease and pulmonary edema may not also have significant cardiovascular failure as a sequel to the major illness, even though clinical evidence of cardiovascular damage is not present.

Paine and his co-workers [14] studied the effects of cardiovascular stresses produced by certain neurological stimuli in dogs. When epinephrine was given, or when the cerebral vessels were embolized with particulate matter, the resulting hypertension was usually tolerated by the heart and pulmonary congestion and edema occurred only rarely; however, in these studies, when the heart was previously damaged by the production of aortic insufficiency (from aortic valvulotomy), the superadded cardiovascular stress of epinephrine or of miliary cerebral embolism resulted in cardiac dilatation, severe elevation of pulmonary arterial and venous pressures, and turgidity and edema of the lung tissue. They emphasized that pulmonary edema was observed only when myocardial failure and engorgement of the lungs occurred. Sarnoff [15] has also shown that under pressor strains from abnormal neurological stimuli, defective cardiovascular performance and congestion and edema of the lungs may occur.

Because of the possibility that major disease of the central nervous system may call forth stresses of such magnitude that cardiovascular function is critically strained, a brief clinicopathological survey was carried out so that we might note the evidence of pulmonary edema and the status of the cardiovascular system in subjects who died with and without central neural disease. We did not conduct the survey to analyze minutely the clinical details leading to pulmonary edema but rather to explore the underlying factors in the pulmonary complication.

AUTOPSY EXAMINATIONS

A search of necropsy protocols was made in the Department of Pathology of the Washington University Medical School for patients who died with major disease of the central nervous system. Special attention was given to the presence of pulmonary edema and morphological evidence of cardiovascular disease, with the use of the usual pathological criteria for the determination of such lesions.[16] Eighty-one consecutive cases in this category were selected. In a parallel series, the records of 57 patients who died of various conditions, exclusive of neurological disease, were likewise chosen in consecutive order, and the notations of the lungs and circulatory apparatus at autopsy were examined. In the combined series of 138 autopsies, 73 of the subjects were found to have edema of the lungs at death.

Pulmonary Edema in Subjects with Significant Central Neural Disease.—In this series of 81 autopsy examinations, 34 patients died with brain tumor, 40 had cere-

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bral hemorrhage, 4 died with cerebral thrombosis, 1 died with amyotrophic lateral sclerosis, 1 of acute anterior poliomyelitis, and 1 of peripheral neuritis. The last three patients died while in Drinker respirators. Thirty-nine of these patients had well-marked pulmonary congestion and edema at necropsy (table 1). Forty-two of the subjects died with no evidence of pulmonary engorgement or edema.

Table 2 illustrates the severity of lung congestion and edema in the group of patients with cerebrospinal disease. Of the six persons who died with fulminating pulmonary edema, five exhibited morphological signs of heart disease; one patient showed no anatomic evidence of heart disease. In the latter subject, a young boy with a fractured skull, fulminating pulmonary edema developed, and he died before blood pressure measurements could be made. Patients who died with moderate pulmonary edema (31 subjects) included 27 (87%) with pathological indications of myocardial disease or hypertension (of unknown duration) prior to death. In the series of 44 patients who died with no evidence of pulmonary edema, 31 (70%) had clinical hypertension or showed signs of cardiac damage at postmortem.

TABLE 1.—*Subjects with Significant Disease of the Central Nervous System With or Without Evidence of Pulmonary Engorgement and Edema at Autopsy*

	No. of Subjects	
Neurological Lesion	Lungs Clear	Lungs Congested: Edema
Brain tumor	21	13
Cerebral hemorrhage	20	20
Cerebral thrombosis	1	3
Peripheral neuritis	0	1 *
Poliomyelitis	0	1 *
Amyotrophic lateral sclerosis	0	1 *
Total	42	39

* Respirator patients.

Pulmonary Edema at Necropsy in Subjects Without Disease of the Central Nervous System.—The 57 patients comprised this group; 23 of these patients died with no indication of edema or congestion of the lungs. In contrast, 34 subjects exhibited pulmonary edema and congestion at necropsy, in four of whom the edema was massive. Twenty-one of the 34 subjects had definite heart disease; four of these had known hypertension as well. Six subjects had no visible evidence of heart disease, and seven died of massive hemoptysis or other conditions capable in themselves of producing pulmonary edema (table 3).

Comparison of the two groups of patients indicates that the incidence of congestion and edema of the lungs is no greater in those who died of neurological disease than in those having no evidence of nervous disorder. Organic cardiovascular disease was present in the majority of patients with pulmonary edema irrespective of the presence of central neural illness.

COMMENT

Interest in clinical "neurogenic" pulmonary edema has been focused on striking individual cases and on reviews of large series of autopsies on patients with neurological disease. From the remarkably high incidence of pulmonary edema in an autopsy series and the impressive nature of the former, the concept has arisen that neurological disturbances are capable, in some direct fashion, of provoking pulmonary transudation.

Among the neurological cases reported here, the incidence of pulmonary edema was high (46%) and compatible with the reports of others; however, the incidence of lung edema among the non-neurological cases was even higher (60%). To our knowledge this is the only reported series in which control series of non-neurological cases were studied. Our results, therefore, do not suggest an important or unique neurogenic role in the occurrence of pulmonary edema. One case included in this series presented the dramatic picture of acute pulmonary edema following a skull injury, with the occurrence of death before clinical cardiovascular evaluation could be carried out. At autopsy, no disease of the heart or blood vessels was found. Similar cases have stimulated speculations as to the cause of this explosive phenomenon. It is apparent from clinical and experimental evidence[14] that every heart has a "failure threshold": a maximum of work that cannot be exceeded without the development of myocardial failure. In the normal heart, this critical work level is high and is only rarely exceeded. In the damaged heart the threshold of incompetence is lower and may be surpassed.[17] It is well known that a

TABLE 2.—*Pulmonary Congestion and Edema at Autopsy in Patients with Neural Disease in Relation to Evidence of Cardiovascular Disease*

	No. of Cases		
	Total	Morphological Signs of Heart Disease and/or Hypertension	No Heart Disease or Known Hypertension
Fulminating pulmonary edema	6	5	1 *
Moderate pulmonary congestion and edema	31	27	4
No pulmonary congestion or edema	44	31	13
Total	81	63	18

* Death before blood pressure was taken.

TABLE 3.—*Postmortem Findings in Subjects Without Neurological Disorders: Comparison of Incidence of Pulmonary Edema with Pathological Evidence of Cardiovascular Disease and Known Hypertension*

		No. of Cases		
Postmortem Findings in Lungs	No. of Cases	No Pathological Evidence of Heart Disease or Known Hypertension	Abnormal Heart at Autopsy	Both Heart Disease and Known Hypertension
No congestion or edema	23	10	10	3
Moderate congestion and edema	30	12 *	15	3
Massive edema	4	1 †	2	1
Total	57	23	27	7

* Other conditions capable of producing the picture of heart failure were seen in six instances: (1) cardiac failure following intravenous administration of fluids, (2) cardiac failure following use of desoxycorticosterone acetate and intravenous administration of fluids, (3) severe pneumonia, (4) pulmonary embolism and acute cor pulmonale, (5) lymphosarcoma and anemia, and (6) airway obstruction.

† Massive hemoptysis.

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damaged heart may be clinically competent at rest; however, added demands from varying degrees of exertion may provoke cardiac inadequacy and thence edema of the lungs. Cardiac patients may experience attacks of pulmonary edema from sudden fear, excitement, or other emotional upheaval.[18] Paroxysms of hypertension and the general decline of cardiovascular renal reserves in the toxemias of pregnancy can incite violent acute left heart failure with seizures of pulmonary congestion.[19] Acute heart failure also occurs after the onset of tachycardia (paroxysmal or sustained); restoration of compensation is often achieved by the reestablishment of normal rhythm or rate.[20] Tachycardias and paroxysms of hypertension produced by adrenal medullary tumors have precipitated congestive failure in the apparently normal cardiovascular system. The corollary may also be carried to the experimental animal, in which the administration of epinephrine or cerebral embolization is followed by such hypertensive cardiovascular disturbance that failure precipitously follows, especially when the heart has been previously damaged.

Clinical observation has repeatedly shown that trauma or other primary disease of the central nervous system (especially with increased intracranial pressure), or injury of neural tissue that distorts autonomic function, may be complicated by hypertension and by disturbances of cardiac rate and rhythm.[21] In some reports, similar to our case of pulmonary edema following skull injury, no measurements of cardiac performance were described, and cardiac failure in relation to neural disease was not considered. Schlesinger [7h] reported the instance of a young man who sustained a puncture wound of the medulla. The patient was said to show no evidence of heart disease. The subsequent development of severe pulmonary edema was attributed to "neurogenic influences" on the lungs. Weisman [13] assembled a series of cases of pulmonary edema following injury of the central nervous system, and he supported the concept that pulmonary engorgement and transudation occurred without evidence of cardiac disease.

A number of other physiological considerations are of interest in the genesis of heart failure and pulmonary edema under these conditions. Disturbances of cardiac rate and rhythm may be associated with central neural disease, particularly with intracranial hypertension.[21] Experimental data further suggest that, under the general circulatory stresses of such lesions, changes in rate [23] and rhythm may intensify myocardial insufficiency and the attendant congestion of the lungs. Marked bradycardia has been demonstrated in experimental animals to diminish cardiac output when slowing was so extreme that an increased stroke output could not compensate for reduction in heart rate.[24] Abnormally rapid or irregular heart action are likewise known to diminish cardiac efficiency.[25] It seems reasonable to assume, therefore, that, with existing hypertension of neurological cause, the superimposition of critically accelerated or decelerated heart rate (from various mechanisms) might further reduce left ventricular function with resultant pulmonary circulatory stasis. It is further noteworthy that respiratory arrhythmias, or unduly slow or shallow excursions, may interfere with cardiovascular performance. In addition, obstruction to airways in patients with depressed cough and respiratory reflexes may produce significant hypoxia with deterioration of efficiency of the heart.[26]

The sequence of events during death may be important in determining the state of the lungs at necropsy. When respiration ceases or becomes critically impaired before cardiac function is diminished, blood is perfused through abnormally hypoxic lung tissue, and subsequent gradual failure of the heart may then encourage rapid transudation. Conversely, should heart action and pulmonary perfusion suddenly cease before the onset of respiratory failure, the tendency for transudation may be slight, for lack of an adequate transuding force.

SUMMARY

Examination of the case material presented here indicates that the majority of patients with serious disease of the central nervous system in whom pulmonary edema developed showed evidence of heart disease at autopsy, or were known to have hypertension before death. Therefore, it seems possible that the pulmonary congestion and edema in these cases were the result of underlying heart disease, to which may have been added hypertension or other abnormality to insure failure of the heart. It is also important that pulmonary congestion and transudation were no more common in the patients with neurological disease than in those who died of other major illnesses. The majority of subjects who died with no neural disorder, but who showed pulmonary vascular stasis and alveolar fluid, also displayed morphological signs of heart disease or were known to have hypertension previous to death. The evidence reviewed suggests that the occasional occurrence of acute pulmonary edema in the presence of an apparently normal heart may be due, in fact, to heart failure produced by the extreme stress of neurogenic hypertension, cardiac and respiratory arrhythmias, and hypoxia.

600 S. Kingshighway.

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CORTICOTROPIN (ACTH) AND CORTISONE IN IDIOPATHIC THROMBOCYTOPENIC PURPURA

Mario Stefanini, M.D., Enrique Perez Santiago, M.D., Jyoti Bhusan Chatterjea, M.D., William Dameshek, M.D.
and
Lucy Salomon, Boston

Idiopathic thrombocytopenic purpura may be due to various pathogenetic mechanisms.[1] It has been recognized recently that, at least in the acute type of the disease, allergic and immunologic factors may be responsible for the occurrence of thrombocytopenia. Since corticotropin (ACTH) and cortisone have been shown to modify immunologic and allergic reactions in various clinical conditions, it appeared of interest to investigate their possible therapeutic value in idiopathic thrombocytopenic purpura. Moreover, we have obtained evidence that corticotropin and cortisone exert a stimulatory effect on the bone marrow cells, including the megakaryocyte-platelet system.

Reports of the treatment of idiopathic thrombocytopenic purpura with the steroid hormones are few and their conclusions justifiably cautious, in view of the extreme variability in the course of the disease. Robson and Duthie[2] studied the effect of cortisone in two cases of idiopathic thrombocytopenic purpura. They noted prompt improvement of the capillary fragility, while the bleeding time followed roughly the changes in blood platelet count. In one case, a definite clinical remission was induced three times, although the platelets failed to return to completely normal levels. Meyer and co-workers[3] treated five patients with 100 mg. of corticotropin a day and concluded that the drug had real value in the treatment of idiopathic thrombocytopenic purpura. These authors also postulated that the spleen regulated the maturation and the release of thrombocytes and that this function might be controlled by the adrenal cortex. These data were extended to include 10 patients,[4] and favorable results on the bleeding manifestations were again reported. Faloon and co-workers[5] treated three patients with idiopathic thrombocytopenic purpura with corticotropin and one with cortisone, noting improvement of bleeding manifestations and of the capillary fragility. Wintrobe and co-workers[6] used corticotropin in one case of moderately severe idiopathic thrombocytopenic purpura; a temporary remission was obtained, but relapse followed in a week and the patient was later cured by splenectomy. Hyman[7] noted temporary improvement in one patient with idiopathic thrombocytopenic purpura given cortisone and persistent remission in a young child receiving corticotropin. In the latter case the prompt control of bleeding manifestations induced by treatment with the hormone appeared to be lifesaving. Evans and Liu[8] described a patient with unremitting, severe chronic idiopathic thrombocytopenic purpura, who had failed to respond to splenectomy. Corticotropin therapy induced two transient clinical remissions.

During the past 20 months we have treated 11 patients with idiopathic thrombocytopenic purpura with corticotropin and/or cortisone. Systematic observations of the influence of the prolonged administration of the hormones on the evolution and course of the disease and on the vascular and plasmatic factors of hemostasis were conducted in eight of these patients. During the same period, studies were made of the effect of single doses of corticotropin and cortisone on the hemostatic mechanism in a series of patients, including 10 with different hemorrhagic diatheses. The results of these studies are discussed in the present paper.

MATERIALS AND METHODS

Two patients (E. F., case 5, and A. W., case 7) received corticotropin from the Wilson Laboratories, a product described as having twice the potency of the standard LA-1-A from the Armour Laboratories, while one patient (K. H., case 1) was treated with a preparation of corticotropin of comparable potency, supplied by Dr. E. B. Astwood. In these three, intramuscular administration of a test dose of 25 mg. of corticotropin was followed in four hours by the expected drop in the direct eosinophil count and urinary excretion of sodium. The remaining patients received cortisone in various doses. Weight, blood pressure, and fluid intake and output were followed daily. Occasional determinations of serum sodium, potassium, and chlorides were made.[9] Symptoms of overdosage (excessive weight gain, hypertension, marked rounding of the face, hirsutism) and the effect of the medication on the hemorrhagic manifestations of

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Research Assistant, Blood Research Laboratory, New England Center Hospital (Mrs. Salomon).

Visiting Fellow, Blood Research Laboratory, New England Center Hospital (Dr. Perez). Present address: Santurce, P. R.

Clinical Professor of Medicine, Tufts College Medical School; Senior Physician and Hematologist, New England Center Hospital (Dr. Dameshek).

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Fellow of the Rockefeller Foundation (Dr. Chatterjea). Present address: Assistant Research Officer, Indian Council for Medical Research, School of Tropical Medicine, Calcutta, India.

From the Ziskind Laboratories (Hematology Section) of the Joseph H. Pratt and New England Center Hospitals, the Boston Floating Hospital, and the Departments of Medicine and Pediatrics, Tufts College Medical School.

Associate Research Professor of Medicine, Tufts College Medical School; Physician, New England Center Hospital (Dr. Stefanini). This work was completed during the tenure of a Damon Runyon Senior Clinical Research Fellowship, administered by the American Cancer Society.

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the patients were noted. Every five days or more frequently in some cases, the following determinations were performed: (1) red blood cell and white blood cell count according to standard techniques; (2) blood platelet count in duplicate, by the indirect method of Dameshek [10]; (3) determinations of the clotting time of whole blood in glass and silicone-coated test tubes; (4) determination of prothrombin activity of plasma and serum; (5) determination of activity of the plasma prothrombin conversion factor (P.P.C.F.), or labile factor; (6) determination of the fibrinogen level. All these techniques have been described in previous communications [11]; (7) determination of the bleeding time, according to the technique of Ivy and co-workers [12]; and (8) determination of capillary fragility. Positive pressure equal to the mean arterial pressure of the subject was applied by means of the cuff of a sphygmomanometer and maintained for 10 minutes. Results of the test were expressed as the number of petechiae in an area 2.5 cm. in diameter, 2 fingerbreadths below the antecubital fossa.

RESULTS

Effect of a Single Injection of Corticotropin or Cortisone on the Various Factors of Hemostasis.—The group studied included 10 patients, divided as follows: three with idiopathic thrombocytopenic purpura, two with hemophilia, two with pseudohemophilia (von Willebrandt's disease), and three with vascular purpura. All patients received an intramuscular injection of either corticotropin (Wilson) or cortisone in a dosage of 2 mg. per kilogram of body weight. The effect on the various factors of hemostasis was determined 4, 8, and 24 hours after administration of the hormone. Only inconclusive variations in the activity of the various agents involved in the process of blood coagulation, the number of platelets, and the bleeding time were noted. It was observed, however, that, while the final value of the bleeding time was not significantly altered, there was a definite prolongation of the phase of reflex vasoconstriction that immediately follows the incision of the skin in Ivy's technique. Capillary fragility, on the other hand, improved in every case, and the number of petechiae decreased strikingly with a maximum effect four to eight hours after the administration of the hormone. Within 24 hours, the number of petechiae obtainable with the tourniquet test returned to the original value (see the accompanying table). These results confirm, in their main lines, those reported by Robson and Duthie.[2]

Effect of Prolonged Administration of Corticotropin and Cortisone on the Bleeding Diathesis of Idiopathic Thrombocytopenic Purpura.—A systematic collection of data was possible in eight cases of idiopathic thrombocytopenic purpura. Clinical history, significant physical findings and laboratory data, results of treatment, and a short evaluation of each case are presented below.

REPORT OF CASES

Case 1.—K. H., a 5-year-old girl, weight 75 lb. (34 kg.), had sore throat and fever and was treated with penicillin seven weeks prior to admission. Purpura, epistaxis, melena, and hematuria were noted for a few days approximately five weeks and again one week prior to admission. Physical examination on admission revealed ecchymoses and scattered petechiae. Laboratory studies showed moderate normochromic anemia; thrombocytopenia (47,000 platelets per cubic millimeter), with an increased number of nonproductive megakaryocytes in the bone marrow; poor retraction of the clot and high prothrombin activity of the serum (62%); a strongly positive reaction to the tourniquet test (48 petechiae); and prolonged bleeding time (more than 20 minutes). The patient was given corticotropin (Wilson) in doses of 40 mg. for five days, 30 mg. for 16 days, 20 mg. for two days and 10 mg. for three days, for a total of 790 mg. over a period of 26 days. The platelet count rose moderately (to a level of 224,500 per cubic millimeter) for a few days at the end of the first week of therapy, only to fall quickly to the original value while treatment was being continued. Clot retraction and prothrombin activity of the serum paralleled the changes in the platelet count. On the other hand, the result of the tourniquet test and the bleeding time became normal or almost so during treatment. Purpura subsided promptly, after approximately four days of treatment, and no new hemorrhagic manifestations were observed during therapy. Two weeks after cessation of corticotropin treatment, however, purpura had recurred and both bleeding time and capillary fragility were again abnormal. Splenectomy was then performed, with excellent therapeutic response. The patient's platelet count has been normal ever since, with the exception of a short period during which, in the course of an undiagnosed "viral" infection, it was reported to have dropped transiently to a level of 84,000 per cubic millimeter.

Comment.—Corticotropin therapy failed to induce a remission in this case, although a transient stimulatory effect on platelet production or release was evident and there was a favorable effect on bleeding symptoms and vascular factors of hemostasis. Splenectomy resulted in a sustained rise in the platelet level.

Case 2.—V. D., a 6-year-old girl, weight 85 lb. (38.6 kg.), had had moderate purpura with thrombocytopenia for approximately four months prior to admission (fig. 1). When the patient was first examined, only a few petechiae and ecchymoses were noted. Laboratory studies showed thrombocytopenia, with a large number of nonproductive megakaryocytes in the bone marrow; insufficient retraction of the clot and high prothrombin activity of the serum; prolonged bleeding time; and increased capillary fragility. The patient received 150 mg. of cortisone daily for 25 days and 100 mg. for 20 additional days, for a total of 5.75 gm. over a period of 45 days. The platelet count rose progressively to almost normal values during treatment, the bleeding manifestations quickly faded, and the various factors of hemostasis studied became normal. Discontinuance of therapy was made necessary by poorly controllable water and salt retention and the appearance of hypertension. Shortly after suspension of therapy, the platelet count fell and moderate hemorrhagic manifestations reappeared. Splenectomy was then performed, with a complete clinical and hematologic remission.

Comment.—Prolonged cortisone therapy in this case induced a clinical but incomplete hematologic remission, with a relapse on suspension of therapy. Splenectomy then induced a full remission.

Case 3.—H. C., a 55-year-old man, weight 215 lb. (97.5 kg.), with the established diagnosis of cirrhosis of the liver and probable tertiary syphilis, had multiple ecchymoses without apparent cause four days prior to his first visit. Physical examination revealed numerous scattered ecchymoses and petechiae and a large, hard liver, palpable 3 fingerbreadths below the costal margin. Laboratory studies showed thrombocytopenia (64,000 platelets per cubic millimeter), with an increased number of inactive megakaryocytes in the bone marrow; definite defect of clot retraction and rather elevated prothrombin activity of serum (47%); prolonged bleeding time (15 minutes); and increased capillary fragility (38 petechiae). The patient received 250 mg. of cortisone for three days, but, in view of early development of hypertension and salt retention, the dose was decreased to 100 mg. daily and the treatment continued for 27 days. The bleeding

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manifestations were reduced with this regimen, and, although the bleeding time remained prolonged, capillary fragility soon became normal. The fibrinogen level remained essentially unmodified. The platelet level tended to rise slowly during and some time after cessation of therapy (up to 294,000 per cubic millimeter, one week after the administration of cortisone had been discontinued). The patient failed to report for periodic examinations. When last seen, he did not present any hemorrhagic manifestations, the bleeding time was only slightly prolonged, and capillary fragility was normal. The platelet count was steadily decreasing at that time.

Comment.—With prolonged cortisone therapy a partial remission was probably obtained. There was evidence that relapse was imminent after suspension of therapy, when the patient failed to report for further observation.

Case 4.—H. F., a 15-year-old boy, weight 115 lb. (52.1 kg.), noted severe purpura, epistaxis, and hematuria four days prior to admission. No definite history of infection or drug intake could be obtained. Examination disclosed multiple ecchymoses. Laboratory studies revealed severe thrombocytopenia (24,000 platelets per cubic millimeter), with an increased number of nonproductive megakaryocytes in the bone marrow; high prothrombin activity of the serum (53%) and almost complete absence of clot retraction; prolonged bleeding time (21 minutes); and increased capillary fragility (29 petechiae). Cortisone was administered in a dose of 150 mg. for 12 days. Bleeding manifestations and capillary fragility improved almost immediately after initiation of therapy, although the platelet count and bleeding time remained practically unaffected. On the 10th day of therapy a quick rise in the platelet count was noticed, and a complete remission followed. Bone marrow studies at this time indicated a slightly increased number of megakaryocytes, producing platelets actively.

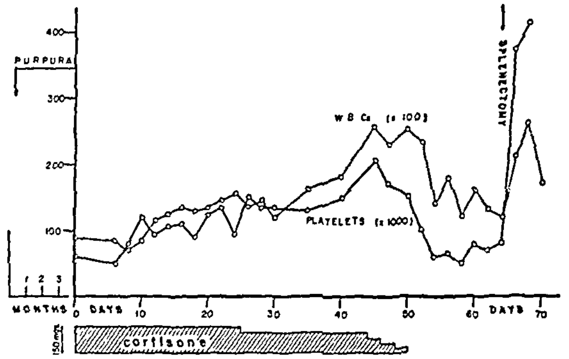
Effect of Single Doses of Corticotropin or Cortisone on Bleeding Time and Capillary Fragility in Various Hemorrhagic Diseases

		Bleeding Time (Min.)				Capillary Fragility (Petechiae)			
Diagnosis	Drug*	0	4 Hr.	8 Hr.	24 Hr.	0	4 Hr.	8 Hr.	24 Hr.
Pseudohemophilia	Corticotropin (Wilson)	>20	>20	>20	>20	5	1	0	4
I. T. P.†	Cortisone	>20	>20	>20	>20	47	19	12	23
Vascular purpura	Corticotropin (Wilson)	5	5½	4	5	21	19	7	24

* Two milligrams per kilogram of body weight.
† Idiopathic thrombocytopenic purpura.

Comment.—Although a prompt remission followed institution of cortisone therapy in this case, this might have occurred spontaneously, since idiopathic thrombocytopenic purpura of the acute variety is usually a self-limited disease, having a course essentially similar to that noted above. The possibility remains that cortisone therapy accelerated a spontaneous process of remission.

Case 5.—E. F., a 16-year-old girl, weight 112 lb. (50.8 kg.), who had had systemic moniliasis for three years, was admitted because of purpura of one year's duration, menorrhagia, and occasional hematuria (fig. 2). There was history of exposure to many medicinal agents, including rabbit serum and chrysarobin ointment, in the previous three-year period. On examination, in addition to the lesions of diffuse moniliasis of the face, hands, and upper respiratory tract, the patient presented diffused petechiae and ecchymoses. The spleen was palpable at the costal arch. Laboratory studies revealed thrombocytopenia, with an increased number of nonproductive megakaryocytes in the bone marrow; absence of clot retraction and high prothrombin activity of serum; prolonged bleeding time; and definitely increased capillary fragility. Moniliasis of the spleen with secondary thrombocytopenic purpura was suspected and splenectomy advised. Except for enlargement, the spleen was found to be normal and free of Monilia. After splenectomy, the bleeding manifestations became worse and we gave the patient two transfusions of fresh blood in an attempt to arrest the serious oozing from the operative wound, severe hematuria, and skin bleeding. On the fourth day after splenectomy it was apparent that no prompt remission of the process was to be expected; corticotropin (Armour) therapy was begun in a dose of 150 mg. a day and continued for nine days. There was diminution of the bleeding tendency, bleeding time, and capillary fragility within 48 hours; approximately five days after initiation of corticotropin therapy, the platelet count rose precipitously and a sustained remission of the process set in.

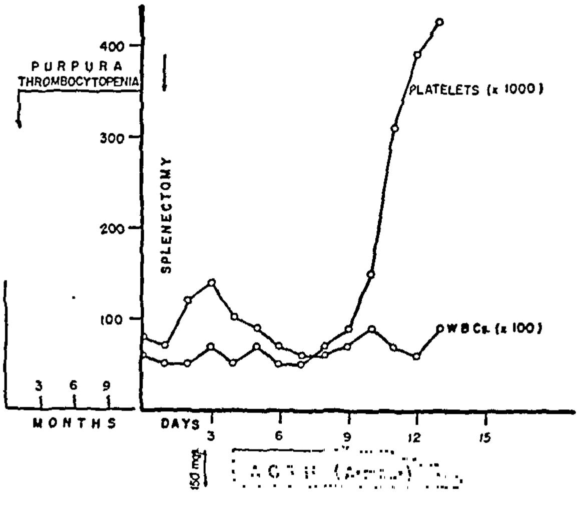


Bleeding time:	7'30"	5'30"	4'	3'30"	2'	2'	2'	1'30"	4'	4'	-	4'	10'30"	10'	2'30"
Cap fragility (petech.)	27	3	4	7	3	2	0	2	0	3	1	4	22	18	2
Prothr activ., plasma (%)	100	90	100	85	95	100	100	95	55	90	-	100	90	-	100
Prothr activ., serum (%)	39	27	15	18	21	27	11	9	8	75	5	72	163	-	21
P P C F activity (%):	85	100	93	100	78	-	100	100	75	100	85	90'	93	-	90
Fibrinogen (mg./100cc)	2797		3421	-	2943	-	3127	-	3225	-	2973	-	3157	-	4730
Bleeding manifestations	3+		1+		1+		0		0		0		2+		0

Fig. 1.—Effect of the administration of cortisone in a patient with chronic idiopathic thrombocytopenic purpura. (P.P.C.F. = plasma prothrombin conversion factor.)

Comment.—Corticotropin therapy in this case was instituted in the hope of controlling the exacerbation of bleeding following splenectomy. Treatment with the hormone appeared to accelerate a delayed response of the disease to splenectomy.

Case 6.—F. R., a 44-year-old woman, weight 142 lb. (64.4 kg.), had a history of easy bruising and spontaneous hemorrhagic manifestations of six years' duration (fig. 3). Three years previously, thrombocytopenia had been detected, idiopathic thrombocytopenic purpura diagnosed, and splenectomy performed. After operation, the platelet count rose to normal levels for approximately six months, after which time it again dropped to subnormal levels and spontaneous bleeding manifestations reappeared. The patient had noticed that spontaneous bleeding (ecchymoses and petechiae) occurred most frequently in the



Bleeding time:	>10'	>10'	7'	2'	1'30"
Cap fragility (petech.):	59	42	0	0	0
Prothr activ., plasma (%)	100	85	100	100	100
Prothr activ., serum (%):	72	42	40	14	7
PPCF activity (%):	100	100	100	100	100
Fibrinogen (mg./100cc.)	2790	2814	1930	3014	-
Bleeding manifestations:	3+	2+	0	0	0

Fig. 2.—Effect of the administration of corticotropin in a patient with chronic idiopathic thrombocytopenic purpura during the immediate post-splenectomy period. (P.P.C.F. = plasma prothrombin conversion factor.)

intermenstrual period, at which time the platelet count had usually been found to be lowered.

Laboratory studies revealed spontaneous bleeding manifestations (petechiae and ecchymoses); a decreased platelet count; prolonged bleeding time and increased capillary fragility; subnormal clot retraction and moderately elevated prothrombin activity of the serum; and large numbers of megakaryocytes in the bone marrow, most of them inactive. Cortisone therapy was begun two days after the last day of the menstrual period, in a dose of 150 mg. a day. This was reduced to 100 mg. after 10 days and to 50 mg. after 25 days. Therapy was continued over a period of 42 days, for a total of 3.85 gm. of the drug. During treatment, definite improvement of spontaneous bleeding manifestations and capillary fragility was noted. The number of platelets, however, oscillated in relation to the menstrual cycle and did not appear to be influenced by treatment. A few days after suspension of cortisone therapy, fresh hemorrhagic manifestations were noted and the capillary fragility was again clearly abnormal. The patient reported that the menstrual period occurring while cortisone was being administered was lengthy and the flow profuse.

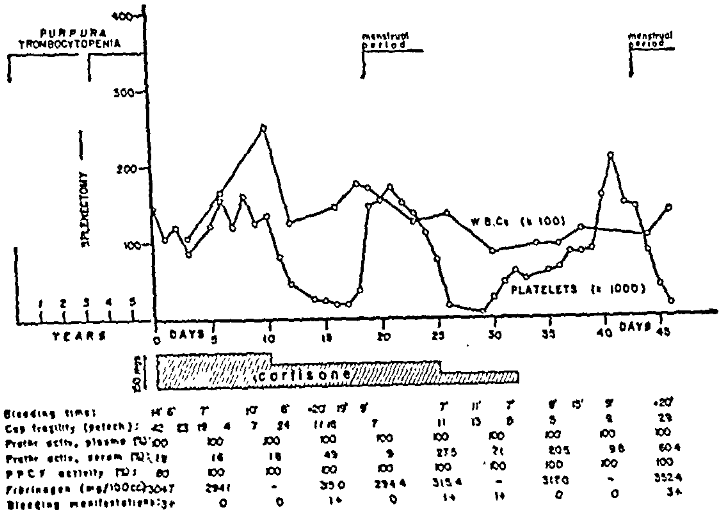


Fig. 3.—Effect of the administration of cortisone in a case of chronic idiopathic thrombocytopenic purpura. (P.P.C.F. = plasma prothrombin conversion factor.)

Comment.—Profuse menstrual flow during the course of corticotropin and cortisone therapy has been observed by us in other patients, even in the absence of thrombocytopenia. Although improving the bleeding manifestations and capillary fragility, cortisone therapy, in this case, failed to induce remission of the disease or even to influence the cyclic changes in the platelet count related to the menstrual cycle.

Case 7.—A. W.,[13] a 15-year-old boy, weight 145 lb. (65.8 kg.), had a purpuric rash and thrombocytopenia in December, 1950, with spontaneous remission in about a week (fig. 4). At the beginning of January, 1951, purpuric spots and thrombocytopenia reappeared and persisted for about a month, when splenectomy was performed. The operation was followed by a temporary rise in the platelet level and remission of bleeding manifestations for three weeks. Early in February, 1951, purpura and thrombocytopenia reappeared, accompanied this time by severe anemia and jaundice and requiring six blood transfusions in one month. On the patient's admission to the hospital (March 20, 1951), pallor and generalized petechiae were the only significant physical findings. Laboratory studies revealed moderate hypochromic anemia with reticulocytosis (5.2%); severe thrombocytopenia, with absence of clot retraction and high prothrombin activity of serum; a normal number of megakaryocytes in the bone marrow, mostly not producing platelets; prolonged bleeding time and increased capillary fragility; a bilirubin level at the upper limits of normal (1 mg. per 100 cc.); a low titer of autoagglutinins and isoagglutinins detectable in an albumin medium and with trypsinized red blood cells; and a positive reaction to the Coombs test. Sixty milligrams of corticotropin (Wilson) was administered for six days. Bleeding manifestations improved almost overnight, the bleeding time became shortened, the capillary fragility decreased, and the platelet count began to rise. The patient was then given cortisone, 100 mg. a day for nine days, but the platelet count fell gradually and spontaneous bleeding manifestations reappeared. Sixty milligrams of corticotropin (Wilson) was then administered daily for a period of 16 days. The same striking effect on the platelet count and the bleeding manifestations was observed, and the patient was then discharged for further observation. After suspension of therapy the platelet level tended to drop and spontaneous bleeding to recur. Corticotropin (Wilson), 40 mg. a day for 20 days, was then given, but the platelet count fell as low as 100,000 per cubic millimeter during treatment, although no hemorrhagic manifestations were noted. Corticotropin therapy was gradually discontinued, and, two weeks later, the platelet count began to rise spontaneously. During the 10 weeks prior to the present counting, the platelet count remained normal. During treatment with corticotropin and cortisone the reaction to the Coombs test continued to be positive and only some reduction of the titer of autoagglutinins and isoagglutinins was noted. Blood transfusions, however, were not required to maintain the red blood cell count at a satisfactory level during therapy.

Comment.—In this case idiopathic thrombocytopenic purpura was associated with acquired hemolytic anemia. Corticotropin therapy, although failing to induce a permanent remission of the thrombocytopenia or disappearance of red cell antibodies, (*a*) made further blood transfusions unnecessary for maintenance of a satisfactory red blood cell count and (*b*) improved the spontaneous bleeding manifestations and the vascular factors of hemostasis. It is significant that cortisone therapy failed to maintain such favorable effects, although it must be stated that the drug was given at comparably lower doses than corticotropin. Finally, however, there was spontaneous remission.

Case 8.—D. B., a 32-year-old woman, weight 188 lb. (85.3 kg.), noted severe fatigue four months prior to admission. One month later, severe anemia was noted and was accompanied by jaundice, purpura, and thrombocytopenia. Several blood transfusions were then required. At that time, a sulfobromophthalein sodium test revealed 45% retention of the dye in one hour. Two months prior to admission, purpura, ecchymoses, and menorrhagia were again noted. Physical examination on admission revealed slight icterus of the scleras, scattered petechiae and ecchymoses, hepatomegaly (the liver being just palpable), and splenomegaly (the spleen being felt 2 fingerbreadths below the left costal margin). Laboratory studies showed mild normochromic anemia; severe thrombocytopenia (11,670 platelets per cubic millimeter); an increased number of nonproductive megakaryocytes and eosinophils (5.1%) in the bone marrow; poor clot retraction (4%) and high prothrombin activity of the serum (100%); prolonged bleeding time (over 15 minutes) and increased capillary fragility (54 petechiae); normal fecal urobilinogen ex-

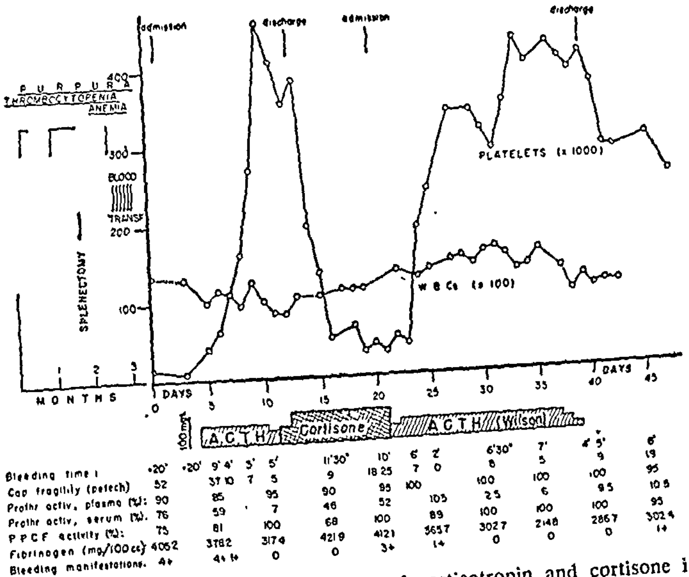


Fig. 4.—Effect of the administration of corticotropin and cortisone in a patient with acute idiopathic thrombocytopenic purpura associated with acquired hemolytic anemia. (P.P.C.F. = plasma prothrombin conversion factor.)

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[13] Information on this patient after his discharge from this hospital was provided by Dr. David Scheinberge, Memphis.

cretion (62 mg. per day); absence of demonstrable agglutinins in the patient's serum; and a doubtful reaction to the Coombs test. A diagnosis of acute idiopathic thrombocytopenic purpura was made, possibly associated with a previous attack of acquired hemolytic anemia. The patient was then discharged with cortisone therapy (150 mg. a day) to be continued for one month. Although the platelet level was not appreciably modified during treatment, the spontaneous bleeding manifestations quickly improved and the capillary fragility decreased. Splenectomy was performed after one month of treatment with cortisone and was followed by sustained clinical and hematologic remission.

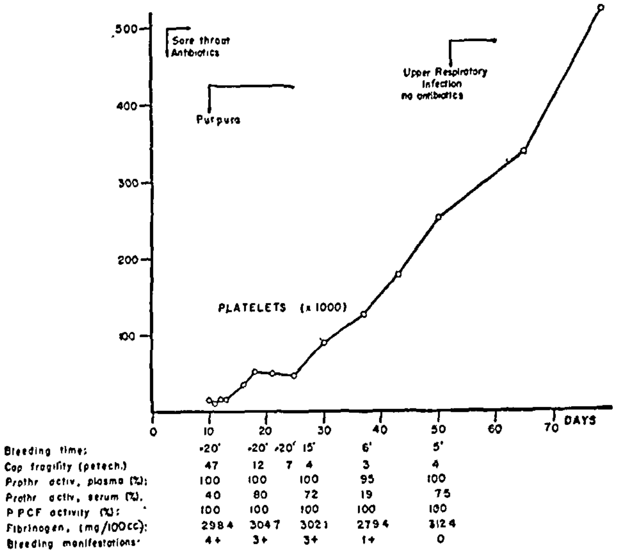

Fig. 5.—Course of events in a case of acute idiopathic thrombocytopenic purpura. Thrombocytopenia and purpura were noted approximately 10 days after the administration of antibiotics for sore throat. Purpura subsided spontaneously 15 days later. The platelet count progressively rose to normal levels. This case illustrates fairly typically the sequence of events in acute idiopathic thrombocytopenic purpura. After an infection or some form of medication and the establishment of an allergic or immunologic "build-up," hemorrhagic manifestations appear because of (*a*) possible direct noxious effect on the capillary wall; (*b*) possible direct noxious effect on the megakaryocytes of the bone marrow, which become inactive and fail to produce and/or release platelets; and (*c*) possible direct destructive effect on the circulating platelets due to acquired immune bodies. During the first stage of the disease the bleeding manifestations in the skin and mucous membranes are severe, the thrombocytopenia is striking, the bleeding time is very prolonged, and the fragility of the capillaries is grossly increased. A few days later, the capillary disorder declines and, although the thrombocytopenia is still present, bleeding manifestations are reduced in intensity and limited, and the bleeding time, still abnormal, is shortened when compared with the previous values. Still later, purpura subsides altogether and, shortly after this, the platelet count begins to rise and a permanent remission becomes established. In a few cases, the acute episode may progress to a chronic process. Although much speculation has been offered, the mechanism of the spontaneous remissions in cases of acute idiopathic thrombocytopenic purpura is not clearly understood. (P.P.C.F. = plasma prothrombin conversion factor.)

Comment.—This is another case of associated idiopathic thrombocytopenic purpura and acquired hemolytic anemia. The latter had greatly improved when the patient was seen by us but was evidenced by the icterus, the splenomegaly, and the history of severe anemia requiring several transfusions. Cortisone therapy, although failing to induce remission of the thrombocytopenia, improved the bleeding manifestations and the capillary resistance. Splenectomy effected permanent cure.

Effect of Prolonged Administration of Corticotropin or Cortisone on Plasmatic Factors of Hemostasis.—The behavior of various plasmatic agents active in the process of the coagulation of blood was carefully studied during the prolonged administration of corticotropin and cortisone to our patients. This study failed to reveal significant, uniform changes, with the exception of the fibrinogen level. This, in agreement with the observations of others,[14] decreased steadily in most cases during the course of corticotropin therapy to values as low as 60% of the original level and resumed normal values shortly after the institution of treatment. Similar fluctuations were not observed during the administration of cortisone.

COMMENT

One cannot evaluate the therapeutic results in cases of idiopathic thrombocytopenic purpura without taking into consideration the natural history and the great variability of clinical features, course, and prognosis of the disease. Particularly imperative, when the results of any form of treatment are being considered, is a clear differentiation between the "acute" and "chronic" forms of the disease.[15] Patients with the "acute" disease usually present a sudden onset of bleeding into the skin and mucous membranes, without previous history of hemorrhagic manifestations, with a recent history of acute infection or drug administration (antibiotics, quinidine, or estrogens). Bleeding is severe and the platelet count very low, and the capillary vessels are apparently involved by the process. Since the condition has a short, self-limited course (two weeks to four months), spontaneous remissions are almost always observed (fig. 5). It is not entirely clear whether splenectomy will hasten the development of a remission in these cases. In the presence of acute purpura, however, splenectomy is dangerous and may be followed by fatal hemorrhage. On the other hand, in the "chronic" type the hemorrhagic manifestations are seldom severe (possibly because the capillary vessels are not directly involved) and the platelet count, although low, is usually higher than in the "acute" type. The disease has a prolonged course, occasional spontaneous remissions are transient, and in about 60% of the patients permanent remission follows splenectomy. This sharp distinction between "acute" and "chronic" idiopathic thrombocytopenic purpura may be somewhat artificial and, in individual cases, may be difficult or even impossible. For most cases, however, it appears to be justified, in view the obvious diversity of the clinical picture and, possibly, because of the pathogenesis of the two types of the disease. In the "acute" variety, allergic and immunologic mechanisms are most likely at play. These may be responsible for platelet destruction [1] and for acute vascular damage, which, in turn, may cause excessive platelet utilization. In view of the ability of corticotropin and cortisone to depress allergic phenomena and decrease antibody activity, treatment with these drugs could be expected to be effective in the "acute" type of idiopathic thrombocytopenic purpura. Unfortunately, however, in view of the common occurrence of spontaneous remissions, it is often extremely difficult to state whether favorable therapeutic results are actually due to therapy.

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[14] Jager, B. V.; Brown, H., and Nickerson, M.: Alterations in Plasma Proteins, Plasma Volume, and Volume of Packed Cells in Patients Receiving ACTH or Cortisone, J. Lab. & Clin. Med. 37: 431-443 (March) 1951. Bernfeld, P.; Bonner, C. D., and Homburger, F.: ACTH and Plasma Proteins, in Mote, J. R., editor: Proc. Second Clinical ACTH Conference, vol. 1, Philadelphia, The Blakiston Company, 1951, pp. 282-289.

[15] (*a*) Hirsch, E. O., and Dameshek, W.: "Idiopathic" Thrombocytopenia: Review of 89 Cases with Particular Reference to Differentiation and Treatment of Acute (Self-Limited) and Chronic Types, A. M. A. Arch. Int. Med. 88: 701-728 (Dec.) 1951. (*b*) Stefanini, M., and others: Studies on Platelets: 2. Effect of Transfusion of Platelet-rich Polycythemic Blood on Platelets and Hemostatic Function in "Idiopathic" and "Secondary" Thrombocytopenic Purpura, Blood 7: 53-76 (Jan.) 1952.

In cases of "chronic" disease several different pathogenetic mechanisms have been advocated. Among these are (*a*) "selective sequestration" of platelets by the spleen, a concept that seems to be refuted by recent experiments conducted in this laboratory,[16] (*b*) production in the spleen or elsewhere in the body of an agent that depresses the formation and/or the release of platelets from the megakaryocytes of the bone marrow, and (*c*) attack of the circulating platelets by antibodies present in the serum, which either destroy platelets directly or make them more susceptible to the trapping and destroying activity of the spleen and reticuloendothelium. No direct evidence that corticotropin or cortisone may directly affect any of these pathogenetic mechanisms has been produced thus far. Even in "chronic" idiopathic thrombocytopenic purpura, however, corticotropin and cortisone therapy might conceivably be beneficial in view of the effects of these hormones on hematopoiesis and the various factors of hemostasis. Corticotropin and, to a lesser extent, cortisone, when administered over a long period of time, may, in certain situations, stimulate the production of platelets.[17] The effect of the prolonged administration of corticotropin and cortisone on the coagulation mechanism is still disputed. Even if treatment with these hormones does not affect the clotting time [18] or the activity of many coagulation factors, there appears to be an increased tendency to thromboembolic phenomena during corticotropin administration.[19] Also, patients receiving corticotropin or cortisone appear to be more resistant to the hypoprothrombinemic effect of bishydroxycoumarin (dicumarol®) and tromexan® (3,3'-carboxymethylene bis-[4-hydroxycoumarin] ethyl ester).[19b] Finally, the results of Robson and Duthie as well as our results indicate a beneficial influence of corticotropin and cortisone therapy on capillary resistance. Theoretically at least, then, corticotropin and cortisone would appear to be of some potential value in the treatment of "chronic" idiopathic thrombocytopenic purpura.

With these concepts in mind, a review of the results obtained in our series of cases becomes possible. Corticotropin was used alone in two cases and associated with cortisone in one case of the disease; two cases were of the acute (cases 1 and 7) and one of the chronic (case 5) variety. In none of the three was there a permanent remission of the disease directly attributable to treatment. The success obtained in case 5 was most likely due to delayed response to splenectomy, although it is conceivable that corticotropin therapy may have accelerated this response. In case 1 the use of corticotropin was followed by a moderate rise in the platelet count in an early phase of therapy, but this was transitory; splenectomy in this case gave an excellent result. In case 7, in which splenectomy had previously been performed, a transient return of the platelet level to normal figures was recorded twice during therapy, but a permanent remission occurred spontaneously while no treatment was being given. Five patients were treated with cortisone, three (cases 3, 4, and 8) with the acute and two (cases 2 and 6) with the chronic disease. Among these, there was no permanent response in four (cases 2, 3, 4, and 8). (Permanent remission later followed splenectomy in cases 2 and 8.) A permanent remission was obtained in case 4, a typical case of acute idiopathic thrombocytopenic purpura. In this type of case, as previously mentioned, spontaneous remissions are common and, although cortisone therapy might have accelerated the natural evolution of the disease, there is no real evidence that it was directly responsible for the onset of the remission.

While no permanent remissions were obtained, many of the characteristic symptoms of the disease were modified. Thus, in cases 1, 2, 3, and 7, corticotropin or cortisone therapy was followed by a rise in the platelet count, apparently not attributable to spontaneous fluctuations or technical errors. The failure to obtain a permanent remission, notwithstanding this initial platelet increase, suggests, however, that the fundamental mechanism responsible for the thrombocytopenia persisted during therapy. The prolonged bleeding time was shortened during corticotropin or cortisone therapy, although not in all cases and not always in a striking manner. Prolongation of the early phase of reflex vasoconstriction that follows the incision of the skin in Ivy's technique was noted in all patients. This finding might be correlated with the observations of Ramey and co-workers [20] that C_{11}-oxysteroids prolong the local effect of nor-epinephrine. The beneficial influence of corticotropin and cortisone therapy on the capillary fragility was much better defined and constant; in every case of this series the result of the tourniquet test was much improved shortly after the initiation of therapy. The effect on the capillary fragility was rather well correlated with the improvement of the spontaneous bleeding manifestations, which was rather prompt and definite in all cases of this series. A similar beneficial effect of corticotropin and cortisone therapy on the bleeding manifestations was observed in three less completely studied patients with idiopathic thrombocytopenic purpura and in 10 with acute lymphocytic leukemia treated with combined administration of 4-aminopteroyl glutamic acid (aminopterin®) and corticotropin. The already low platelet count of these patients was consistently lowered further by treatment with the folic acid antagonist. New bleeding manifestations, however, were seldom noticed when corticotropin was being administered along with 4-aminopteroyl glutamic acid, even when the latter drug was given in doses much larger and for periods of time longer than usual.

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[16] Stefanini, M., and others: Studies on Platelets: 3. Absence of "Selective Sequestration" and Destruction of Platelets by Spleen in "Idiopathic" Thrombocytopenic Purpura, Blood **7**: 289-301 (March) 1952.

[17] Dameshek, W.; Saunders, R. H., and Zannos, L.: Use of ACTH in Treatment of Acute and Subacute Leukemia, Bull. New England M. Center **12**: 11-21 (Feb.) 1950.

[18] Fahey, J. L.: Effect of ACTH on Whole Blood Coagulability, Proc. Soc. Exper. Biol. & Med. **77**: 491-494 (July) 1951.

[19] (*a*) Cosgriff, S. W.: Thromboembolic Complications Associated with ACTH and Cortisone Therapy, J. A. M. A. **147**: 924-926 (Nov. 3) 1951. (*b*) Stefanini, M., and Chatterjea, J. B.: Blood Research Laboratory, New England Center Hospital, unpublished data.

[20] Ramey, E. R.; Goldstein, M. S.; Fritz, I., and Levine, R.: Relation of Nor-Epinephrine and Other Autonomic Agents to Vascular Collapse of Stressed Adrenalectomized Animals, read before the 63rd Annual Meeting of the American Physiological Society, Cleveland, April 29, 1951; abstracted, Federation Proc. **10**: 108 (March) 1951.

[21] Evans, R. S., and others: Primary Thrombocytopenic Purpura and Acquired Hemolytic Anemia: Evidence for a Common Etiology, A. M. A. Arch. Int. Med. **87**: 48-65 (Jan.) 1951.

Case 7 of our series poses a number of interesting problems. As in case 8, idiopathic thrombocytopenic purpura was associated with acquired hemolytic anemia. This has been emphasized by Evans and co-workers [21] as an indication that in some instances idiopathic thrombocytopenic purpura may be due to immunologic mechanisms similar to those at play in acquired hemolytic anemia. In view of the probably immunologic or allergic pathogenesis of the thrombocytopenia in this patient, the prompt response of the platelet level to corticotropin therapy is not surprising. It is interesting, on the other hand, that cortisone therapy failed, in the dosage used, to maintain the remission induced by corticotropin therapy. We recently studied a patient with chronic idiopathic thrombocytopenic purpura who had had an unsuccessful splenectomy, in whom the severe bleeding manifestations could be controlled with corticotropin therapy, while they were unaffected or even made worse by the administration of cortisone. These observations might suggest that corticotropin is more active than cortisone in the treatment of idiopathic thrombocytopenic purpura. Since, however, in case 7 no influence on the platelet count was observed when the dose of corticotropin was reduced, it might well be, at least in some instances, that failure of corticotropin and cortisone therapy in cases of idiopathic thrombocytopenic purpura is due to insufficient dosage of these hormones.

Conclusions as to the value of corticotropin and cortisone therapy in idiopathic thrombocytopenic purpura are difficult to reach, in view of the complex effects observed. It seems safe to assume that no permanent remission of the disease is obtainable, although a transitory increase in platelets may be observed. On the other hand, the ability of these hormones to influence favorably the bleeding manifestations of the disease cannot be underestimated. We have repeatedly noted how corticotropin and cortisone therapy may reduce promptly the spontaneous bleeding manifestations of many patients with idiopathic thrombocytopenic purpura. At the present time our resources against severe bleeding in cases of idiopathic thrombocytopenic purpura are limited, consisting mostly in the transfusion of fresh platelet-rich blood or plasma or of isolated platelets.[15b] It seems to us that corticotropin and cortisone may be of some value in the management of idiopathic thrombocytopenic purpura, contributing to (*a*) control of severe bleeding, especially in the "acute" disease, when an expectant attitude may be rewarded by the occurrence of spontaneous remission; (*b*) reduction in loss of blood at the operating table when used prior to splenectomy (delayed wound healing has not been observed except after prolonged corticotropin or cortisone therapy); and, finally, (*c*) control of the severe spontaneous bleeding symptoms occurring in some patients who have had an unsuccessful splenectomy.

It is not possible to explain the mechanism by which corticotropin and cortisone affect favorably the capillary resistance. It is probably related to the beneficial effect of splenectomy or even of the simple incision of the skin on the bleeding manifestations and capillary fragility in cases of idiopathic thrombocytopenic purpura that was observed by Robson.[22] More studies are needed to elucidate this significant point, which may greatly improve our understanding of the pathogenetic mechanism of idiopathic thrombocytopenic purpura.

SUMMARY

Eleven patients with "acute" and "chronic" idiopathic thrombocytopenic purpura were treated with corticotropin (ACTH) or cortisone, and systematic studies were conducted in eight. Although no permanent remission of the disease was obtained in any of the patients studied, these hormones (*a*) reduced, in most cases, the spontaneous bleeding manifestations, (*b*) improved the capillary fragility, and (*c*) shortened the bleeding time and prolonged the phase of initial vasoconstriction that followed the incision of the skin. It appears that corticotropin and cortisone may be usefully employed in patients with idiopathic thrombocytopenic purpura: (*a*) to control severe bleeding, especially in those with the "acute" type of the disease, when an expectant attitude may be rewarded by the occurrence of spontaneous remission; (*b*) prior to splenectomy, when this procedure is considered necessary, to reduce the loss of blood at operation; and (*c*) when splenectomy has been unsuccessful and severe spontaneous bleeding manifestations continue.

ADDENDUM

Four additional patients with idiopathic thrombocytopenic purpura have been treated with corticotropin or cortisone since this article was submitted, with results that confirm those of the present article. In one of these patients, who had the chronic type with a demonstrable high titer platelet agglutinin in the serum, administration of cortisone temporarily reduced the titer of the agglutinin, without, however, appreciably affecting the number of circulating platelets.

Harrison Ave. and Bennet St. (Dr. Stefanini).

22. Robson, H. N.: Idiopathic Thrombocytopenic Purpura, Quart. J. Med. 18:279-297 (Oct.) 1949.

Toxic Effect of Nerve Gases.—The nerve gases . . . are nearly colorless, essentially odorless liquids, which yield toxic vapors on evaporation. More toxic than formerly known chemical warfare agents, they may gain entrance to the body by inhalation of the vapor or by absorption of the liquid agent through the skin, the eyes or the gastrointestinal tract. The symptoms induced are due largely or entirely to the inactivation of cholinesterase. This leads to the accumulation of acetylcholine in both the central and the peripheral nervous system and to acetylcholine poisoning. . . . Exposure to traces of the vapor causes pin-point constriction of the pupils in a few minutes, usually accompanied with mild paroxysmal bronchoconstriction and a watery nasal discharge. A slightly greater exposure induces ciliary spasm, pain on focusing the eyes and a drawing sensation or pain in or back of the globes, radiating frontally or to the occiput, and is often accompanied with moderate photophobia. . . . The inhalation of larger doses of vapor, or the absorption of liquid nerve gas by other routes, causes a rapid and severe bronchospasm, which obstructs both inhalation and exhalation. The subject becomes confused and cyanotic, may have nausea and vomiting and soon falls unconscious. Meanwhile, his blood pressure falls to shock level; severe bradycardia develops, and cardiac arrest may occur as a temporary or terminal event.—Colonel John R. Wood, M.D., Medical Problems in Chemical Warfare, *Journal of the Royal Army Medical Corps,* March, 1951.

J.A.M.A., June 14, 1952

EIGHTEEN YEARS OF DEPENDENCE ON A RESPIRATOR

Scott Lord Smith, M.D., Poughkeepsie, N. Y.

A case of respiratory poliomyelitis and peripheral paralysis was reported in THE JOURNAL (**113:** 1806 [Nov. 11] 1939) in which the patient had depended on a respirator for eight years. This dependence continued 10½ more years until the patient died, on April 17, 1950. During the 18½ year period that he was ill, the patient stayed in Vassar Brothers Hospital, Poughkeepsie, N. Y. As the report covering the first eight years is presented here in the briefest outline, the original report should be referred to for details.

REPORT OF A CASE

B. S., then 13 years old, was admitted to the medical service of Vassar Brothers Hospital on the fifth day of an acute attack of poliomyelitis, with complete paralysis of all four extremities, with the exception of the toes and the fingers of the left hand. Twelve hours later, dyspnea and cyanosis necessitated the continuous use of the respirator, on which he was dependent during his entire illness. At first, he could be out of the respirator for only 30 seconds before acute respiratory distress developed. The ability to carry on voluntary or perhaps semivoluntary respiration with his auxiliary muscles of respiration and one leaf of the diaphragm slowly increased, permitting him by the end of the first year to remain outside the respirator eight to nine hours a day and to eat outside of it. Fluoroscopic examination revealed a right diaphragm excursion that was estimated to be 2 cm., and no movement of the left leaf was visible.

In the second year, the slowly built up dependence on the right scalenus group as auxiliary respiratory muscles collapsed without warning. Rushed back into the respirator, the patient remained there for days, until the left scalenus muscles developed a compensatory capacity. During this year, attempts were made to induce the development of subconscious respiration; these consisted of encouraging attempts to sleep with the respirator shut off, opening the respirator after the patient had gone to sleep with it running, and using sedatives and fatigue to induce natural sleep. All these measures failed.

During the first years, three types of problems arose and are described in detail in the first report: (1) those immediately connected with the patient's care, (2) those concerned with the physiological changes occurring as a result of extreme paralysis, and (3) those involved in a study of his respiratory control. During this period, many general problems were encountered. A kidney stone, eyestrain, scoliosis, contractures, and psychological adjustment all demanded attention. In addition, he had been through the vicissitudes of pneumonia, eczema, hay fever, mental depression, and the recurrent common cold, which was particularly difficult to deal with in one who could not cough, spit, or sneeze. Continuous 24 hour special nursing care was unavoidable and was exceeded in importance only by the mechanical respirator. The same machine, with only rare intervals of disuse while it was being repaired, was used during the entire 18 year period.

The final case history begins as the preliminary report ended, with a review of the mode of life, physical and mental symptoms, and laboratory findings of a 20-year-old youth who, since the beginning of his illness, had never drawn a sleeping breath, because each respiratory movement depended either on his voluntary muscles of respiration when out of the respirator or on the negative pressure of the machine when in use for sleep or rest. His first 8 years of such existence were remarkable and worthy of comment, so 10 more years, raising the period of dependence to 18½ years, becomes the more worthy of being recorded. Such a review, moreover, describes the progressive and disastrous changes that occur in the human body as a result of a totally abnormal mode of life. The later years covered in the preliminary report pointed the way to degenerative changes. Renal calculi were formed; spinal curvature developed; there were contractures of both hands; and there were psychological and psychiatric changes. In the interest of brevity, this review will be divided into two five year periods and a terminal six month period.

The first period, therefore, starts with the picture of a young man who has abandoned the hope of recovery with which he courageously met the early years. For hope he substituted interest in the things about him and in the reports of athletic contests, in crossword puzzles, chess, checkers, and card games. Learning to direct chess moves on a board behind him, which he saw in a mirror, involved education in the basic physics of light for the patient and his nurses and physicians. Many of his chess games were carried on by mail with other invalids.

During this five year period, there was little detectable change. The patient's weight remained around 80 lb. (36.3 kg.); scoliosis did not materially increase; and periodic roentgenograms showed only a slow increase in size and a change in shape of the left renal calculus in the renal pelvis. There was more albuminuria but less bleeding and pain. He was out of the respirator for 5 to 10 hours a day and made frequent trips to the movies in his wheel chair. His morale was good and his spirits high.

During the second five year period, the pattern of degeneration as outlined in the earlier story began to develop slowly and inexorably. Peripheral edema developed, beginning in the hands and feet, and albumin, which was 20 mg. per 100 cc. at the beginning of the period, was now 200 mg. per 100 cc. The amount of time spent in the respirator slowly increased as did the number and duration of upper respiratory infections, which for years had been less frequent. On the brighter side, he was able to enjoy vacations for three summers, making the 30 mile ride to a lakeside cottage in a truck equipped with an emergency generator for the respirator, which was also in the truck. Here, with his parents and one nurse, he could spend his days in a wheel chair on the dock and have "his people with him." At this point, I must pay tribute to the role that parental devotion played in maintaining morale and adding physical comfort. Daily, during the entire 18 years, one or both parents would be at the hospital to prepare and eat supper with him, run his movies, or play games with him. The vacation in his last summer was marred by increasing edema, increasing dependence on the respirator, and physical distress for which sedation was needed.

The terminal period, which ensued in the autumn of 1949, was a period of rapid, general deterioration, the most pronounced factor being the increasing subcutaneous edema; anasarca developed, but the serous cavities participated to only an insignificant degree. The extremities and genitals became enormously distended. The patient's weight increased 50 lb. (22.7 kg.), and, in the last few days of life, fluid dripped through the skin of the axilla fast enough to permit collection in a test tube. This fluid had approximately the chemical properties of sweat: protein, 1.20 gm.; albumin, 0.46 gm.; and globulin, 0.74 gm. per 100 cc., with albumin-globulin ratio, 0.6; urea nitrogen, 16.4 mg., and sodium, 141.5 mg. per 100 cc. A phenolsulfonphthalein test for renal function showed 8.6% excretion in one hour, 6.8% in the second hour, and 11.0% in the third hour, for a total of 26.4%. The volumes of the hourly urine specimens were 64 cc., 46 cc., and 60 cc., making a total of 170 cc. The blood urea nitrogen, which had been 8.0 mg. per 100 cc. a few months before, was now 46.6 mg. The creatinine and chloride levels did not change appreciably. Nonprotein nitrogen was 83.8 mg. per 100 cc.; total serum proteins were 4.64; albumin was 1.99; globulin was 2.65; and the albumin-globulin ratio was 0.75.

At this time, the patient had, without prodromal symptoms, a profuse gastric hemorrhage and vomited bright red blood. Anorexia, abdominal distention, and growing lethargy, merging into coma in the last three days of life, accompanied the kidney dysfunction. The autopsy, which did not include examination of the brain and the central nervous system, revealed the following findings. Renal calculi had developed in both kidneys; there was pyonephrosis of the left kidney and perirenal abscesses; and there was amyloidosis of both kidneys. The left kidney was completely functionless, and a small cystadenoma was found in the right kidney. There was atelectasis of the left lower lobe of the lung and anthracosis of both lungs and hilar lymph nodes. There was complete atrophy of the muscle in the left dome of diaphragm. The right leaf contained a thin layer of muscle fibers, but there were none in the left leaf, which was a thin parchment-like membrane. There was complete atrophy of chest and abdominal wall muscles and of skeletal muscles. In the abdominal cavity, it was noted that the fat was about 2 cm. thick. No abdominal wall muscle tissue was seen, and the fat was firm, fibrous, and indurated. Also, the covering of the chest showed complete atrophy of pectoral muscles. There was fibrous tissue between the fat and the ribs. The fat was tough and leathery. There was amyloidosis of spleen and adrenals, duodenal ulcer, edema of the legs and arms, and the spinal column was sharply bowed to the right from the cervical region to the sacrum.

SUMMARY

A case of poliomyelitis with massive peripheral and respiratory paralysis, ending in death after 18 years' dependence on a respirator, is discussed and followed through the entire period of illness. A search of the literature, with the help of the New York Academy of Medicine library staff, has disclosed no reports of a similar case for comparison or suggestions. Problems suggested and remaining unanswered in this report are concerned with why the subconscious control of respiration in sleep failed to redevelop, in spite of persistent efforts to induce sleep by sedatives and fatigue. (Dr. Drinker felt that apprehension was the cause of the sleeplessness outside the respirator and suggested the measures we used in the attempt to overcome it.) The second question concerned the reason for the serous cavities not participating in the general anasarca. The frequency of respiratory infection and the mechanical difficulties involved in treating them are described and discussed. Much of this boy's treatment took place before the sulfonamides and the antibiotics were used. The enormous importance of morale is emphasized, and the many possibilities of diversion and education for the greatly handicapped are apparent. The original Drinker respirator remained in use for the entire 18½ years.

113 Academy St.

TEEN-AGE DRUG ADDICTS ARRAIGNED IN THE NARCOTIC COURT OF CHICAGO

Harry R. Hoffman, M.D., Irene C. Sherman, M.D., Fannie Krevitsky, M.A.
and
Forrestine Williams, B.A., Chicago

The growing menace of drug addiction among teen-agers has aroused the public to the extent that in some areas efforts are being made to determine the cause and to find ways of treating it. The epidemic-like quality of the problem indicates the need of close cooperation of all public groups to attempt to understand and deal with it. In Chicago, the problem is being attacked in several ways, but primarily the emphasis has been on law enforcement and legal procedures to deal with law offenders who are also drug addicts.

On April 2, 1951, the Narcotic Court of the Municipal Court of Chicago was established as a result of the recognition on the part of law-enforcing officers of the increasing use of narcotics among teen-agers and the resulting increase in crime occasioned by their use. All cases originating in Chicago that involve law-violating narcotic addicts are processed through the Narcotic Bureau of the Chicago Police Department for trial in the Narcotic Court. This court, the only one of its kind in the world, is now handling all cases of law-violating addicts in the city of Chicago. It is presided over by Judge Gibson E. Gorman, who on its inception asked for support and advice from other disciplines dealing with this problem. At his request, the services of the Mental Hygiene Section of the Chicago Health Department were made available to him in an advisory capacity. As an outgrowth of this plan, the staff of the Mental Hygiene Section, consisting of two psychiatrists and two psychiatric social workers, on the suggestion of the Advisory Committee to the Mental Hygiene Section, made a study of 25 teen-age addicts appearing in Judge Gorman's court, in the hope that some light might be thrown on the cause of addiction and make possible some recommendations to the court, social agencies, and the community at large.

As we observed the general population of the court, we found that most of the law offenders were petty criminals, who engaged in such acts as petty thievery and soliciting to support their addiction. Possession and peddling were more serious offenses. Except for those brought into court on a loitering charge, almost all the offenders were "lone wolves." Organized gangs do not tolerate drug addicts, because of fear of their unpredictable behavior.

Illinois law regarding narcotic drugs is found in the Uniform Narcotic Drug Act, of which section 23 was approved July 8, 1935, as amended to read as follows:

> Whoever violates this act by selling, prescribing, administering or dispensing any Narcotic Drug, shall be imprisoned in the penitentiary for a term of not less than one year nor more than five years for the first offense. Whoever violates this act by possessing, having under his control, manufacturing or compounding any Narcotic Drug shall be fined for the first offense not more than $5,000.00 or be imprisoned for a period of not less than one year nor more than five years, or both. For any subsequent offenses, the violator shall be imprisoned in the penitentiary for any term from two years to life.
>
> Whoever violates this act by selling, prescribing, administering or dispensing any Narcotic Drug to any person under 21 years of age shall be imprisoned in the penitentiary for any term from two years to life.
>
> Whoever is authorized in this act to manufacture, possess, have under his control, sell, prescribe, administer, dispense, or compound any Narcotic Drug, who violates this act by failing to comply with any provision prescribed in this act for the exer-

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From the Mental Hygiene Section of the Chicago Board of Health, section financed by the *National Mental Health* Authority. Dr. Hoffman, Director; Dr. Sherman, Chief Psychiatrist; Miss Krevitsky, Director of Psychiatric Social Service; and Miss Williams, Psychiatric Social Worker.

cise of such authority, for the first offense, shall be fined not more than $1,000.00 or be imprisoned in the County jail for a term of one year, or both; and for any subsequent offense shall be fined not more than $3,000.00 or be imprisoned in the penitentiary for a term of not more than five years or both.

Any offense under this act shall be deemed a subsequent offense if the violator shall have been previously convicted of a felony under any law of the United States of America or of any state or territory, or of the District of Columbia, relative to Narcotic Drugs.

In addition to the above Uniform Narcotic Drug Act, the City Council of Chicago, in an effort to combat the growing problem of addiction and to eradicate sources of supply of drugs, on May 24, 1951, amended the city disorderly ordinance to include loitering by a narcotic addict. The new loitering ordinance was included in section (13) of City Ordinance (193-1).

Loitering according to police usage means to loiter in public places, presumably with intent to commit crime or mischief; to linger idly along the way; spend time idly; be dilatory; delay; to travel indolently with frequent intermissions; or to consume time idly.

Designed primarily to bring the narcotic user before the court and to impose sentence in the form of "cold turkey"[1] treatment, the ordinance has created panic both for the addict and for all young persons whose only place of meeting friends has been the street. Under this ordinance, the "cured" addict may feel like a condemned man whose telltale scars on his arms will forever prevent his freedom from the police.

In the atmosphere of fear and punishment that prevails in a court setting, we studied 25 young addicts, 17 to 21 years old, a psychiatrist interviewing the addict and the social worker, the relatives. The interviews were made after the court had passed judgment, and we recognized that both the defendant and his relatives might be hostile and suspicious. Surprisingly enough, both were willing to cooperate, and except for one situation the general emotional tone was that of passivity during the court hearing and the interviews, although the defendant at the time of his court appearance had usually already experienced from one to five days' detention in the city lockup.

This report is based on 21 case studies, the remaining 4 being rejected because of race, sex, or lack of available history. At the time the study was made, the Negro male offender predominated in the court, and the representative sample was therefore limited to male Negroes.

Of the 21 youths studied, the age range was 17 to 21 years, with an average of 18.8 years. Eighteen were single and three married. Two were born out of wedlock, and in one case this information was not ascertained. Eight were living with only their mothers, two with only their fathers (one of these boys slept in his father's home but took meals and had his laundry done by an older sister, who was the only "mother" person he had known), seven with both parents, two with grandmothers, and two with their wives.

The group appears to be typical of the general population of teen-agers in terms of education and intelligence. Of the 21 boys, only 4 had had less than at least some high school education, and one had completed three years of college. Of the 16 who had attended high school, 6 were graduates. The four who had not attended high school had all quit grade school at the age of 16, one having reached the fifth grade, one the sixth, and two the seventh grade. In one of these instances, there was a special reading difficulty—word blindness. In a second, there was a question of possible organic brain disease following an accident. In the other two instances the mentality seemed definitely dull. On the basis of these findings, intelligence as such was not a significant factor in drug addiction in this group.

All but 1 of the 21 boys were users of heroin (diacetylmorphine), and he had been smoking marijuana for one month. The usual process of development of the drug habit was to start with marijuana and, after an interval varying from one month to two years (average 12 months), to change to heroin. Only four boys stated they had started their habit with heroin.

The age of onset of the use of drugs ranged from 13 to 19 years, with an average of 16.6 years. Two-thirds of the group said they were taking one to two capsules a day. Five boys stated they were taking cocaine, and one was taking morphine and opium as well as heroin. Eight said they drank no alcohol, 10 drank occasionally, and 3 drank regularly while taking drugs.

All these youths lived in a thickly populated, deteriorated area on the south side of Chicago. There are few playgrounds and community recreation centers in this area, and the youths have accepted the streets as meeting places with friends. Housing is poor and rentals exorbitant, but the parents seemed happy to have a place to live and invariably indicated that they were managing satisfactorily despite the fact that one-third of the subjects were living in overcrowded households. In several instances the youths shared bedrooms with grandmothers, mothers, and sisters.

In all the cases, the mother, grandmother, or sister emerged as the dominant figure for these boys. Where parents lived together, the father's role was overshadowed by the mother. In more than 50% of the cases, the father had been absent for most of the patient's life and no meaningful male substitute replaced him in the emotional life of the boy. Most mothers related with pride that they had a close relationship with the patient and pointed to his achievements in feminine pursuits as his special way of being helpful to them. They talked of their sons as good boys, of being interested in them, and of not wanting to hurt them.

Although the exact income was not ascertained in all instances, only one family was currently totally dependent on relief (Aid to Dependent Children). All the other informants indicated they were able to support themselves, meeting at least their minimum needs. The lowest income reported was $40 a week for a family of four, and the highest was $95 a week for a family of three.

In spite of the relative good intelligence of the group as a whole, only four of these youths had a trade—one was a clothes presser, one a candy maker, one an auto repair man, and one a photoengraver. The presser had learned his trade while an inmate of St. Charles School for Boys. Although discharged two years previously, he had never worked at his trade. The candy maker, a boy of 17, had completed sixth grade at 16, while in Sheridan Reformatory for stealing. Since his release three months previously, he had had a job in his trade for three weeks but had been laid off about a month prior to apprehension by the police. The photoengraver said he had tired of that work and had taken a job as bus boy in a local hotel. The auto repair man had been working for two weeks on a job he had secured after being laid off for two months from a previous job as a spray painter. All these youths had had menial odd jobs, such as shining shoes, porter, and bus boy. Ten of them were unemployed at the time of their court appearances.

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[1] Immediate and complete withdrawal of the drug.

There was a defeatist attitude prevalent in relation to employment. The feeling that no matter how hard one tried one would not succeed was repeated frequently in our discussions. The fact that one could not secure employment commensurate with one's ability, education, interest, and aspirations was an accepted fact, and there was a total lack of incentive to achieve except in fantasy, where the patient emerged as a successful person.

In an attempt to learn whether there was an addiction pattern in the family, we made inquiry regarding the use of drugs or alcohol. In two instances older brothers were narcotic addicts, who managed to maintain their habits without coming into conflict with the law. Most of the parents indicated there was social drinking in the home, and liquor was frequently offered to the addict as a substitute for drugs. A brother of one patient was an alcoholic, and one mother admitted she was an alcoholic. One of her sons, older than the one brought into court, was also a narcotic user. In only one situation was a member of the family in a mental institution (Dixon State Hospital).

In response to inquiry regarding police records of members of the family other than the patient, it was learned that in three families, siblings had police records, and one father had such a record. Generally speaking, most of the families were proud of their social behavior and indicated a desire to live acceptable communal lives.

Exploration of social relationships revealed that the boys studied had many acquaintances but few real friends. In only one case, parents indicated that the patient was a member of an organized gang during early adolescence. Few patients at an early age were members of organized social-recreational groups, such as the Boy Scouts or the YMCA. Most of the boys had engaged in some church activities as youngsters, but the experience had not been too meaningful and had not continued into adolescence.

The general description of personality as given by parents and relatives was that of quiet, well-mannered, rather dependent boys who were easily influenced by others and quick to accept leadership. They were passive, fearful youths who shunned aggressive companions, chose quiet games, and in their homes accepted responsibility for tasks such as housecleaning, cooking, and shopping. As addiction developed, they became isolated, restless, moody, and secretive. This behavior did not particularly alarm or surprise most of the mothers, and in almost every case they said it was not a clue to the addiction. Most of the informants stated they had not known of the addiction until the boy was apprehended by police. Their reactions were those of shock, fear, and shame. Mothers in two instances said they had "wanted to die"; if their boys could not be cured, they did not want to live to see them suffer or become criminals. The attitudes of parents were definitely punitive in only two cases. One father, who had little attachment to his son in spite of the fact that he had reared the boy without a mother from the age of 2, said the boy deserved whatever punishment he received, and he would not help him in any way. In the second case, the mother had had her son arrested "to teach him a lesson."

In spite of comments made by parents that they were not aware of their son's addiction until apprehension, most of them had clearly been suspicious, for they revealed that they had prayed for their sons, talked to them of the evils of drugs, selected their friends, and attempted generally to manage their lives. In several instances, they had taken the boys to physicians for help and advice.

The fact was particularly striking that in the court room, and generally in the interviewing situation, the feeling tone expressed by relatives and patients was that of complacency. Mothers wanted their boys "cured" so that they could return home, where they would be carefully watched. Most of the boys, on the other hand, seemed relieved by the jail sentence.

All these youths expressed a desire to break their drug habit, but six of them were repeaters, having had treatment either at the United States Public Health Service Hospital, Lexington, Ky. or during a previous jail sentence. Most of them said they believed their present incarceration would solve their problems of addiction. A few feared the return to their old environments because of temptations and police pressures, for all felt they were "marked men." Only one expressed the desire to leave home, on the basis of his inability to withstand "the jealousy of father."

REPORT OF CASES

The following case histories are presented to amplify the material given above.

Case 1.—Frank, age 20, single, was the third-born and only boy in a family of four children. He was graduated from high school at the age of 18 and began to work as a photoengraver, a trade he learned while in school. He tired of this job and five months previous to his arrest had gone to work as a bus boy in a local hotel. He recognized this job was out of keeping with his intelligence and education, but apparently it offered some glamour. He earned $6 a day, which was insufficient to pay for his drugs. His father had died three years previously of heart disease, brought on supposedly by constant, excessive drinking. He had not worked regularly for 10 years prior to his death, and the mother was the main wage earner in the family. The oldest sister completed high school and attended three different colleges. A second sister, age 22, was graduated from high school and married shortly afterward. The youngest sister stopped school at 15, because of pregnancy. The family arranged for her marriage, which was reported as successful. The patient seemed to have had a close attachment to the second sister, for he said he could confide in her and be understood by her. The family described the patient as a "good mixer" who belonged to clubs in high school. He seemed to be a quiet boy who was interested in music and played the clarinet and the piano.

Frank said he started his habit by smoking marijuana while a senior in high school; his friends smoked and he wanted to be like them. After a year he "tried out" heroin with a friend because, he said, he thought it would give him a new experience. Once he started taking the drug he was "hooked," and every thought became centered on securing money for it. His earnings were insufficient for his needs, and six days before his arrest he approached persons in the building where he lived for bottles to sell. His aunt, who lived in the building, appealed to him to stop bothering the tenants. He threatened her with a bottle; when he showed uncontrollable rage, she called the police.

CLINICAL NOTES

TETANUS RESULTING FROM FOREIGN BODY IN THE NOSE

REPORT OF A CASE

Robert B. Tudor, M.D., Bismarck, N. D.

This case is reported because of the rarity in the literature of tetanus resulting from a foreign body in the nose. As no demonstrable portal of entry can be found in from 20 to 35% of the cases,[1] it is possible that foreign bodies in the nose have been overlooked as the site of infection.

In 1940, Spaeth,[2] in summarizing 33 cases of tetanus treated at Iowa University Hospital, reported a case in a 2½-year-old child, who had mild symptoms of tetanus, possibly due to pebbles in the nose, and who recovered. In 1950, Linker, Rosenthal, and Golomb [3] reported a case from Fordham Hospital, New York City, in which a 17-month-old Negro child was admitted with profuse nasal discharge and weakness. Frequent irrigations brought a paper match stick out of one nostril. The child died from tetanus the fifth day after admission. Clostridium tetani was cultured from the match stick. The average incubation period of 847 cases of tetanus when the site of infection is in the head and neck is 9.6 days.[4]

REPORT OF CASE

A 4½-year-old white girl was admitted to the hospital on March 15, 1949. Her past history was contributory in that she had received no immunizations. During 1948, she had had pertussis, chickenpox, and measles in succession. Since that time her health had been good. On March 12, 1949, she became ill with a stiff neck, and it was noted that her mouth was drawn to one side. Soon she could not open her mouth, and the next day her extremities became stiff and began to tremble. There was no history of exposure to acute or chronic illness and no history of recent injury. Examination disclosed a well-nourished, acutely ill child, with rigidity of all muscles. The head was drawn back, the legs and feet were extended rigidly, and the arms also were stiff. The abdominal muscles were board-like. She talked clearly and was cooperative. When stimulated, she showed tremors of all muscles. The eyes and ears were normal, and the throat was slightly injected. The heart and lungs were clear. The genitalia were normal. No abrasions or old injuries were found on the skin. On examination of the nose, a large purulent mass was visualized well back in the left nostril. When this was removed it was found to be a piece of cloth. A purulent looking ulceration was left at the site of the foreign body in the nose. Unfortunately, this area was not cultured. Accessory clinical findings were temperature 99.8 F, rectally; urine negative; hemoglobin 73%; leukocytes 8,600, with polymorphonuclears 57% and lymphocytes 41%.

After a skin test was found to be negative, 100,000 units of tetanus antitoxin was given intramuscularly. The child was then sedated with 2½% thiopental (pentothal®) solution, which was added as indicated to a continuous intravenous drip of 5% glucose solution. Penicillin was also administered intravenously for the first week of the illness. From 20 to 30 cc. of thiopental sodium was necessary daily until March 25, 1949; 12 cc. was used on March 25, 1949, 9 cc. on March 26, 10 cc. on the 27th, 5 cc. on the 28th and 29th, and 1 cc. on the 30th, after which administration could be discontinued. On March 28, 1949, the child's mouth became less rigid and she was able to chew some gum. Her muscles still became rigid when she was touched, as late as March 27. She was taking soft foods well on March 31, and intravenous administration of penicillin was discontinued. This same day physical therapy was begun for her legs, which remained stiff. Her convalescence was complicated by a mild serum sickness on the eighth hospital day and by phlebitis of the left saphenous vein on April 4. On April 9, her 25th hospital day, she was walking and the nasal ulceration was well healed; she was discharged two days later. She was seen again on May 2, and, at that time, there was no evidence of muscular disability.

SUMMARY

A case of tetanus resulting from a foreign body in the nose is reported. Only one other case was found in the literature in which tetanus unquestionably resulted from a nasal injury.

From the Department of Pediatrics, Quain and Ramstad Clinic.

[1] Pratt, E. L.: Clinical Tetanus: A Study of 56 Cases with Special Reference to Methods of Prevention and a Plan for Evaluating Treatment, J. A. M. A. **129:** 1243 (Dec. 29) 1945. Spaeth, R.: Therapy of Tetanus: A Study of 276 Cases, Arch. Int. Med. **68:** 1133 (Dec.) 1941. Clinical Conference: Conference at the St. Louis Children's Hospital, July 30, 1948, J. Pediat. **33:** 630, 1948.

[2] Spaeth, R.: A Clinical Study of Tetanus, Am. J. Dis. Child. **60:** 130 (July) 1940.

[3] Linker, M.; Rosenthal, I. M., and Golomb, J.: Tetanus Resulting from a Foreign Body in the Nose, New York State J. Med. **50:** 1620, 1950.

[4] Spaeth, R.: Serum Therapy of Tetanus, with Special Reference to Course of Antitoxin Titers in the Blood After Treatment with Specific Serum, Am. J. Dis. Child. **61:** 1146 (June) 1941.

SPONTANEOUS RUPTURE OF THE SPLEEN IN MALARIA

REPORT OF A CASE

Lieut. Col. Richard C. Shrum
Lieut. Col. Francis W. Lanard
and
Major Daniel C. Wilkerson, (MC)
United States Army
Fort Leavenworth, Kan.

Spontaneous rupture of the spleen is a rare complication of malaria. Leighton [1] accumulated 72 cases from the literature between 1842 and 1917. In a masterful review of the American and foreign literature between 1917 and 1948 Hershy and Lubitz [2] found only 64 cases, 25 of which had occurred during naturally acquired malaria and 39 of which had occurred during therapeutic malaria. In their article they reported one additional case occurring in naturally acquired malaria, and Lubitz [3] subsequently reported three more. Because this subject is mentioned so infrequently in the literature, and in the American literature especially, the following case is considered worthy of record.

REPORT OF CASE

A 20-year-old white soldier, who had returned from Korea on rotation six weeks previously, was admitted to the United States Army Hospital, Fort Leavenworth, Kan., on Aug. 15,

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From the United States Army Hospital, Fort Leavenworth, Kan.

[1] Leighton, W. E.: Spontaneous Rupture of the Malarial Spleen, with Abstract of Cases Reported Between 1842 and 1921, Ann. Surg. **74:** 13 (July) 1921.

[2] Hershy, F. B., and Lubitz, J. M.: Spontaneous Rupture of Malarial Spleen: Case Report and Analysis of 64 Reported Cases, Ann. Surg. **127:** 40-57 (Jan.) 1948.

[3] Lubitz, J. M.: Pathology of the Ruptured Spleen in Acute Vivax Malaria, Blood **4:** 1168-1176 (Oct.) 1949.

1951, with the history of fever, chills, headache, and malaise of four days' duration. Temperature, pulse rate, respiratory rate, and blood pressure on admission were 103.4 F, 88, 20, and 120/80, respectively. The spleen was not palpable, and the remainder of the physical examination revealed nothing remarkable. Routine blood cell count and urinalysis disclosed no abnormalities. Because the patient had been receiving chloroquine phosphate prophylactically till he left Korea, a blood smear was examined for malaria parasites, and ring forms of Plasmodium vivax were found. Malarial therapy was begun with chloroquine phosphate, and after 36 hours the patient was asymptomatic. He was to have been dismissed Aug. 20, but on Aug. 19, he began having slight diarrhea associated with nausea. At about 3 p. m. he vomited and then got up to go to the bathroom. En route he "fainted"; when aroused he complained of mild pain in his left upper abdominal quadrant. Later that evening he became sweaty, cold, and pale. His pulse rate was 120 per minute and blood pressure 70/40. The red blood cell count was 2,500,000 and hemoglobin 8 gm. There had been no hematemesis, and no evidence of blood could be found in the rectum. Percussion of the abdomen produced a persistent dulness in the left flank, regardless of the patient's position. A diagnostic paracentesis immediately produced a syringeful of bright red blood. A presumptive diagnosis of rupture of the spleen was made, and during the next eight hours the patient was given 5 pt. (950 cc.) of blood, after which exploration was performed through a left rectus-splitting incision extending from the costal margin to below the umbilicus. When the peritoneum was opened, the peritoneal cavity was found to contain much free blood and many clots. The spleen was moderately enlarged, and a subcapsular hematoma was present. A splenectomy was done, after which all the clots and free blood that could readily be scooped out with the hand and aspirated with the suction apparatus were removed; the abdomen was closed without any drains. The patient had an uneventful recovery and was sent on convalescent leave on the 12th postoperative day.

Pathological Observations.—The spleen measured 17 by 11 by 5.5 cm. The capsule was lifted from the entire surface except about the hilar blood vessels. The surface was granular and pitted and focally covered with blood clots. The cut surface revealed a homogeneous gray parenchyma with no discernible pulp markings.

Microscopic examination revealed a subcapsular hemorrhage with a diffuse infiltration with polymorphonuclear neutrophilic leukocytes. The lymphoid follicles were widely separated and had the usual architecture. The red pulp reticulum was swollen, and there were greater numbers of the reticulum cells. The pulp was not particularly crowded with red blood cells but was full of large numbers of polymorphonuclear eosinophilic leukocytes. There was considerable brown, hemosiderin-like pigment in the reticulum cells and in the pulp sinuses. Giemsa stains on touch preparations from the pulp and on the microscopic slides revealed no parasites.

COMMENT

The changes in the spleen were not typical of any specific process but were compatible with a diagnosis of malaria or infectious mononucleosis with spontaneous rupture. The absence of parasites was not important in view of the treatment the patient received, and it may be assumed that the proved clinical malaria was responsible for his splenomegaly and spontaneous rupture.

When the patient returned from convalescent leave, Oct. 1, blood was drawn for heterophil agglutination, with a subsequent report of "no titer."

SUMMARY

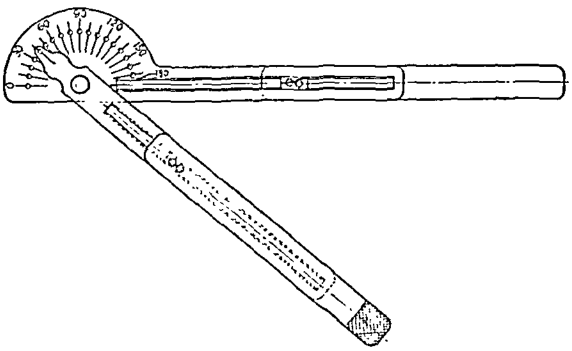
A case of spontaneous rupture of the spleen in a patient with malaria due to Plasmodium vivax is reported, with recovery following splenectomy.

AN IMPROVED GONIOMETER FOR ARTHROMETRY

Harold Raoul Wainerdi, M.D., New York

A goniometer [γωνία = angle + μέτρον = measure] is a modified protractor used in orthopedics and rheumatology to measure joint angles and so to evaluate motion. The arms of the instrument are aligned with the long axes of the articulating bones that comprise the joint to be examined. The subtended angles are measured on the usual circular scale. Such data properly secured are objective and are invaluable in assaying joint function and in planning and evaluating surgical and medical treatment.

Goniometers presently in use have certain limitations. Because the arms are not adjustable in length, they may be either too long for measuring certain joints or too short for convenient use in others. The scale is incremented in extremely small units, often as small as 1 degree; consequently, since the scale is usually small, it is difficult to read. As will be discussed below, joint measurements in units smaller than 10 degrees are not usually significant. Most goniometers presently in use are opaque, so that, in measurements of angles subtended by small bones (as at the metacarpophalangeal and the interphalangeal joints), the axes are not accurately located. Finally, the central riveting arrangements may be slack and thus allow motion of the two arms between the adjustment of the device and reading of the scale. These features may introduce significant errors in joint measurements.



Improved goniometer for arthrometry (approximately 38% of full size).

In this improved instrument (see the accompanying figure) have been incorporated features that make it an instrument of increased reliability and convenience. It is made of transparent plastic; a firm rivet and a detenting device fix the arms without danger of slipping, at 10-degree intervals, so that angles are measured to the nearest 10 degrees. The scale is easily read because it is possible to use larger figures, since fewer are given. When collapsed, the arms allow convenient measurement of small articulations; when the arms are extended, the angles of larger joints may be measured more accurately than with currently used goniometers.

From the Department of Medicine, The Hospital for Special Surgery. Assistant Physician at the Hospital for Special Surgery; Assistant Physician, Sea View Hospital.

COMMENT

It may seem that scale graduations of 10 degrees, which permit a determination of the angle at a joint to within 5 degrees, are too gross for clinical work. However the nature of the measuring process precludes significant observation to a greater precision. Since measurements are taken along bone axes enveloped in muscle, tendons, skin, and other tissues, a considerable error is always implicit in joint measurements. It must be obvious that increments of 1 or 2 degrees, as on most goniometers, are not significant figures and that data determined from any goniometer have a precision limited by the observational process rather than by the least count of the scale. It is also of great importance that the alignment of the instrument to the joint be anatomically accurate and that the positions of patient and examiner be such that errors of parallax be avoided.

SUMMARY

A goniometer modified by extensible arms and a detenting protractor is described, and its advantages in measuring joint motion are briefly outlined.

502 Park Ave.

PERIAURICULAR BACTEROIDES INFECTION, PROBABLY ARISING IN THE PAROTID

REPORT OF A CASE

Walter E. Heck, M.D.
and
Robert C. McNaught, M.D., San Francisco

The incisurae Santorini are two of three fissures in the anteroinferior wall of the cartilaginous external auditory canal.[1] Their importance as a point of breakthrough of parotid infection, especially an abscess, is stressed in most standard ear, nose, and throat textbooks.[2] Such an occurrence is, however, rarely seen.

This report concerns a 2½-year-old girl in whom such a sequence of events took place, plus the development of periauricular cellulitis and a subtemporal abscess. Of additional interest is the fact that the infecting organism was of the Bacteroides group, not usually thought of in relation to ear conditions. Recovery followed surgical and massive antibiotic therapy, particularly the use of terramycin.

REPORT OF A CASE

D. B., a 31-month-old white girl, was first seen in November, 1950, with the chief complaint of a swelling of the left side of the face and head, of two weeks' duration. Her mother stated that 13 days previously, without history of previous ear disease or of preceding cold, the patient began to complain of pain in the left ear. Thereafter the left side of the face and head became progressively more swollen. Hot packs were applied, and a neighbor provided an infra-red lamp. As a consequence of the misuse of the latter, the left ear was burned superficially. After three days the left ear had suddenly begun to discharge. A physician was then seen, who administered a penicillin injection on three successive days and had then prescribed a sulfonamide mixture. The patient's urine became very dark after the start of the sulfonamide therapy, according to the mother. One week before the patient was seen by us, another physician was called, who made a diagnosis of mumps. The swelling meanwhile had extended forward, and 24 hours before we saw the child the left eyelids had become swollen, closing the palpebral fissure. Throughout the illness the temperature had reportedly been 104 to 105 F rectally.

The past history and family history were noncontributory except that the child had never had any immunizations. On admission to the hospital her temperature was 39.2 C (102.2 F) rectally, pulse rate 120, and respiratory rate 28. She weighed 27 lb. (12.2 kg.). The left side of her face and head was markedly swollen, from about 1 in. (2.5 cm.) above, behind, and below the left ear, pushing the auricle downward and forward, and extending anteriorly to the nose. The left eyelids were swollen shut. The left ear canal exhibited a slightly bulging, reddish area anterosuperiorly and contained some muddy debris. Farther in was seen an essentially normal tympanic membrane. A large firm globule of cerumen was removed from the right ear canal, revealing a normal tympanic membrane. The parotid duct orifices were not remarkable. The only other positive physical finding was the surprisingly alert, rational appearance and behavior of the youngster, despite the fever and deformity.

Laboratory studies revealed a hemoglobin value of 9.9 gm. per 100 ml., red blood cell count of 3,590,000 per cubic millimeter, and total leukocyte count of 32,050 per cubic millimeter, with 71% neutrophils (8 banded and 63 segmented), 20% lymphocytes, and 9% monocytes. The urine was normal. X-rays of the mastoid processes were technically unsatisfactory, but were not suggestive of acute mastoiditis.

In the hospital the patient's temperature continued upward, reaching 41.1 C (105.3 F) rectally four hours after admission. She was given 500 mg. of terramycin on admission, as the elixir, with 250 mg. every six hours thereafter. Because of the apparent overwhelming infection, of unknown bacteriologic causation, we gave 400,000 units of penicillin and 0.5 gm. of dihydrostreptomycin intramuscularly in preparation for surgical intervention. Fourteen hours after the child's admission, under general anesthesia, myringotomy was done, without revealing abnormal secretion. Incision and drainage above and behind the ear released foul pus under pressure, which spurted from the incision as it was made. This subtemporal abscess contained about 90 ml. of pus. Two Penrose drains were inserted under the temporal muscle as far forward as possible.

The patient's temperature became normal within 12 hours, and except for slight fluctuations remained so thereafter. The swelling of the tissues of the left side of the face and head subsided rapidly, except in the area of the left parotid. A transfusion of 200 ml. of whole blood was given because of the anemia.

Culture of the pus from the abscess revealed a member of the Bacteroides group. Sensitivity studies were inconclusive, because of poor growth on control mediums. On receipt of this report, treatment with all anti-infective drugs except the terramycin was stopped. The drains were removed and the patient left the hospital on the fifth postoperative day. Terramycin therapy, 250 mg. every six hours, was continued for four days at home.

The incision healed rapidly. The left parotid swelling persisted, sufficiently so that x-ray therapy was considered. Six weeks postoperatively the parotid appeared normal, however, and this therapy was not used. Follow-up examination 11 months postoperatively revealed normal structures. The patient's mother stated she could no longer find the site of the incision.

COMMENT

In retrospect, the obvious sequence of events here was, first, otalgia, due to parotitis (not a rare symptom complex), followed by abscess formation in the parotid. Posterior extension occurred, with rupture via the fis-

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From the Division of Otorhinolaryngology, Department of Surgery, Stanford University School of Medicine.

[1] Schaeffer, J. P., editor: Morris' Human Anatomy: A Complete Systematic Treatise, ed. 10, Philadelphia, The Blakiston Company, 1942, p. 1224.

[2] Ballenger, W. L.; Ballenger, H. C., and Ballenger, J. J.: Diseases of the Nose, Throat and Ear, ed. 9, Philadelphia, Lea & Febiger, 1947, p. 562. Jackson, C., and Jackson, C. L., editors: Diseases of the Nose, Throat, and Ear, Including Bronchoscopy and Esophagoscopy: With the Collaboration of 64 Outstanding Authorities, Philadelphia, W. B. Saunders Company, 1945, p. 199. Lederer, F. L.: Diseases of the Ear, Nose and Throat; Principles and Practice of Otorhinolaryngology, ed. 4, Philadelphia, F. A. Davis Company, 1943, p. 4.

sures of Santorini and discharge from the ear canal. At about this point a clinical diagnosis of mumps was made. The infection continued to extend, posteriorly forming a subtemporal abscess and anteriorly cellulitis sufficiently extensive to obliterate the palpebral fissure. The choice of terramycin for therapy was a fortunate one, in view of the subsequent isolation of a Bacteroides organism.[3] The clinical course proved its effectiveness.

Clay and Webster Streets.

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[3] Rantz, L. A.: Bacteroides Endocarditis: Report of a Case Successfully Treated with Terramycin, J. A. M. A. 147: 124 (Sept. 8) 1951.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

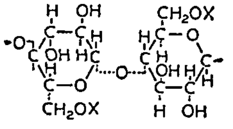
The following additional preparations have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary*.

Sodium Carboxymethylcellulose.—Thylose Sodium (Jackson-Mitchell).—$(C_8H_{11}NaO_7)_x$.—M.W. about 330,000.—Sodium carboxymethylcellulose is prepared by the reaction of alkali cellulose with sodium monochloroacetate according to the following equation:

$$RONa + ClCH_2COONa \rightarrow ROCH_2COONa + NaCl,$$

where R represents the cellulose structure. The reaction conditions are chosen to give about 0.8 of a sodium carboxymethyl group ($NaO_2C{-}CH_2{-}$) for each anhydroglucose unit in the cellulose molecule. The structural formula of sodium carboxymethylcellulose may be represented as follows:



$X = H$ OR CH_2CO_2Na

Actions and Uses.—Sodium carboxymethylcellulose is a synthetic hydrophilic colloid gum. It is similar to methylcellulose in forming a soft bulk in the bowel after oral ingestion. Sodium carboxymethylcellulose differs in its action from methylcellulose in that it is insoluble in gastric juices. It is a satisfactory and desirable adjunct to reeducation in the treatment of chronic constipation.

Dosage.—The usual dose is 1.5 gm. three times daily with meals, accompanied by one or two glasses of water.

Tests and Standards.—

Physical Properties: Sodium carboxymethylcellulose is a white to light buff, odorless, hygroscopic powder. On heating, it browns between 226 and 228°, and chars between 252 and 253°. A 1% solution has a viscosity between 1300 and 2200 centipoises, and a pH between 6.5 and 8.0.

Identity Tests: Dissolve about 1 gm. of sodium carboxymethylcellulose in 100 ml. of water at 45°: a heavy, mucilaginous, opalescent solution results. To 5 ml. of the solution add 8 ml. of alcohol: the solution becomes hazy *(presence of carboxymethylcellulose)*.

Add 10% hydrochloric acid to 10 ml. of the 1% sodium carboxymethylcellulose solution until the pH is 0.5: a fine, white, cloudy precipitate forms *(presence of carboxymethylcellulose and distinction from methylcellulose)*.

Boil 5 ml. of the 1% sodium carboxymethylcellulose solution for 5 min.: no precipitate forms *(distinction from methylcellulose)*.

Reflux a 5 ml. portion of the 1% sodium carboxymethylcellulose solution with 5 ml. of hydrochloric acid for 30 min. Cool the mixture to room temperature and neutralize the excess hydrochloric acid with 10% sodium hydroxide. Add 2 or 3 drops of this solution to 5 ml. of hot alkaline cupric tartrate T.S.: a yellow to bright red colloidal precipitate forms *(presence of reducing sugar)*.

Heat a platinum wire in the outer cone of a Bunsen burner flame until the flame is colorless. Dip the wire into a 1% solution of sodium carboxymethylcellulose and again heat it: the flame is a brilliant yellow *(presence of sodium)*.

Assay: (Sodium) Carefully ash about 1 gm. of sodium carboxymethylcellulose, accurately weighed. Add 1 ml. of sulfuric acid and heat cautiously to dryness. Repeat the addition of sulfuric acid and heating until the mass is entirely white. Heat the crucible in a muffle furnace at 700° for 1 hour, cool the crucible in a desiccator and weigh. Each gram of sodium sulfate formed is equivalent to 0.3238 gm. of sodium and 4.626 gm. of sodium carboxymethylcellulose. The amount of sodium present is about 7%.

(Degree of Substitution) Dry about 50 mg. of glycolic acid in a desiccator over calcium chloride for 24 hours. Transfer 25 mg. of the acid, accurately weighed, to a 250 ml. volumetric flask, fill to the mark with water, and mix. Transfer exactly 0.2, 0.5, and 1 ml. of this solution to separate test tubes (20 × 2 cm.) and add 20 ml. of color reagent (0.01% 2,7-dihydroxynaphthalene dissolved in sulfuric acid, prepared at least 24 hours before using in order that the initial color will have time to disappear). Heat the tubes in boiling water for 20 min., cool them, and transfer the solutions to 50 ml. volumetric flasks, rinsing the tubes with three 5 ml. portions of water and adding the rinsings to the flasks. Cool the flasks and contents to room temperature, and make up to volume with water. Again cool to room temperature. Read the color of the standards at 5400 Å with a Beckman spectrophotometer against a blank of 20 ml. of the color reagent treated in the same fashion as the standards. Plot the concentration of glycolic acid in the aliquot taken versus the spectrophotometer readings to give a standard curve. Check this curve each week, if the reagents are retained.

Grind the sample to be analyzed, to pass a 20 mesh sieve, mix it thoroughly, and dry at 105° for 4 hours. Transfer to a dry 250 ml. Erlenmeyer flask with a standard-taper, ground-glass joint about 35 mg. of the dry product, accurately weighed. Add 25 ml. of 6% sodium hydroxide and shake the flask until the sample dissolves completely. Wash down the neck and sides of the flask with 25 ml. of water. Add 36 ml. of sulfuric acid. Reflux the material for 3.5 hours, cool to room temperature, transfer to a 100 ml. volumetric flask, and dilute to the mark with 50% sulfuric acid. Prepare a reagent blank consisting of 25 ml. of water and 36 ml. of sulfuric acid, and treat it in the same manner as the unknown samples. Pipet 1 ml. of the final unknown and blank solutions into test tubes and add 20 ml. of the color reagent. Heat the tubes in boiling water for 30 min. Proceed as directed in the preparation of the standard curve starting with, ". . . . cool them, and transfer the solutions to *50 ml. volumetric flasks . . .*" *Read the concentration of glycolic acid* corresponding to the absorption from the calibration curve. Calculate the degree of substitution from the equations: $A = (100 \times \text{wt. glycolic acid in gm. in the aliquot}) \div \text{wt. of sample in gm.}$; degree of substitution $= 162\ A \div (76\text{-}80\ A)$, where 76 is the molecular weight of glycolic acid, 162 is the molecular weight of the anhydroglucose unit of cellulose, and 80 is the net increase in the weight of the anhydroglucose unit of cellulose for each sodium carboxymethyl group substituted. The degree of substitution is about 0.8.

Dosage Forms of Sodium Carboxymethylcellulose

TABLETS. *Identity Tests:* Crush 10 tablets and pass the powder through a 20 mesh sieve. The powder responds to the identity tests in the monograph for Sodium Carboxymethylcellulose.

Assay: Perform the assays on tablets ground to pass a 20 mesh sieve and dried at 105° for 4 hours.

(Sodium) On an amount of powdered tablets, accurately weighed, equivalent to about 1 gm. of sodium carboxymethylcellulose, perform the assay for sodium as described in the monograph for Sodium Carboxymethylcellulose. The amount of sodium present is about 7% of the labeled amount of sodium carboxymethylcellulose.

(Degree of Substitution) On an amount of powdered tablets, accurately weighed, equivalent to about 35 mg. of sodium carboxymethylcellulose, perform the assay for degree of substitution as described in the monograph for Sodium Carboxymethylcellulose. The degree of substitution is about 0.8 on the basis of the labeled amount of sodium carboxymethylcellulose.

Jackson-Mitchell Pharmaceuticals, Inc., Los Angeles

Tablets Thylose Sodium: 0.5 gm.

Diphtheria and Tetanus Toxoids with Pertussis Vaccine, Combined (See New and Nonofficial Remedies 1951, p. 394).

Eli Lilly & Company, Indianapolis

Diphtheria-Tetanus Toxoids and Pertussis Vaccine Combined: 1.5 cc. vials (one immunization) and 7.5 cc. vials (five immunizations). 50,000 million *H. pertussis* organisms in each cubic centimeter, with diphtheria and tetanus toxoids. Preserved with thimerosal 1:10,000.

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HYPOTHYROIDISM, A GERIATRIC PROBLEM

In a recent paper Kimble and Stieglitz [1] emphasize that the most significant potentialities of geriatric medicine lie in the area of preventive or anticipatory therapy during the years of senescence. Any dysfunction that tends to accentuate or accelerate deprivation, they believe, must be detected early and treated accordingly.

The more or less gradually diminishing thyroid function presents one such problem. The basal metabolic rate changes appreciably with aging because of diminished needs of the organism. When the basal metabolic rate reaches a level of –20% clinical evidences and myxedema appear as a rule. The differentiation between hypometabolism as such and hypothyroidism is based both on basal metabolic rate and on certain clinical evidences. Frank myxedema is rare in the United States, especially in the aged. Monroe [2] found an incidence of 0.007% in 8,000 hospital patients over 61. This disease is manifested by puffiness of the face and eyelids; edema of the tongue and larynx; dry, rough skin that feels thickened; dry, brittle hair; apathy and mental and physical inertia; chronic constipation; stubborn anemia; depressed basal metabolic rate, lowered serum protein-bound iodine, and elevated serum cholesterol. The authors are concerned with the milder cases of hypothyroidism in the aged, which they believe to be much more frequent than has been hitherto recognized. Symptoms of hypothyroidism frequently pass unnoticed because of their gradual onset and because they are accepted by both the patient and the physician as normal phenomena attendant on the process of aging. The importance of early recognition of hypothyroidism is stressed, because its correction restores the patient's zest for living and his productivity and theoretically may retard degenerative processes, such as atherosclerosis.

Thus Morrison [3] regards atherosclerosis not as an inevitable process accompanying advancing age but rather as a metabolic error and as such a preventable process. Among the factors incriminated in the production of atherosclerosis, he lists imbalance and deficiencies of endocrine function, implicating the thyroid and the sex hormones.

The earliest symptoms of hypothyroidism are due to deceleration of the oxidative processes and consist of diminished tolerance to cold, mental sluggishness, and a lack of physical energy. A basal metabolic rate lower than –15 is suggestive, but definite diagnosis must rest on the therapeutic test, namely, the amelioration of symptoms and signs following replacement therapy. Later and more pronounced symptoms are caused both by the lowered oxidative processes and by specific effect on various organs. These symptoms, according to Rose,[4] are as follows: (1) vague pains, aches, and stiffness in the back and extremities; (2) indigestion, flatulence, constipation, anorexia; (3) menorrhagia, metrorrhagia, amenorrhea, dysmenorrhea, sterility, and frigidity; (4) angina and constrictive circulatory symptoms; (5) schizoid or anxiety states, insomnia, abnormal drowsiness, deafness, and (6) anemia resistant to therapy.

Hypothyroidism is to be strongly suspected in the presence of the above symptoms, a low basal metabolic rate, elevated serum cholesterol, and a serum protein-bound iodine level less than 3.0 μg. Amelioration of symptoms following administration of the thyroid confirms the diagnosis.

The work of Kountz and Chieffi [5] offers objective evidence that correcting hypothyroidism in elderly persons retards senile degeneration. They noted clinical improvement from adequate thyroid therapy in patients suffering from degenerative changes and exhibiting a lowered basal metabolic rate. There was a retardation of the degenerative process in the treated patients and a progression of degenerative changes in the persons treated only symptomatically.

In a group of 82 patients 40 years of age or older and suffering from hypothyroidism, Kimble and Stieglitz [1] noted that the most frequent symptom was fatigue. Diminished cold tolerance was another prominent symptom, particularly among the aged. There was also a tendency to gain weight, persistent dryness of the skin and hair, muscular aches and pains, poor memory, palpitation, and chronic constipation. Administration of small doses of U. S. P. desiccated thyroid was followed by a return to mental alertness and physical vigor. Cold tolerance improved, and the skin and hair lost their dry, coarse texture. The therapeutic success, these authors stress, depends on accurate dosage and employment of a small initial dosage and the avoidance of overmedication.

If involution of the thyroid is a physiological reaction to diminished bodily requirements for thyroxine, as some investigators believe, then stimulation of thyroid activity to a level appropriate to earlier life would be irrational. However, the rationale of replacement therapy finds support in more than one field of geriatric practice.

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1. Kimble, S. T., and Stieglitz, E. J.: Hypothyroidism: A Geriatric Problem, Geriatrics **7**: 20-31 (Jan.-Feb.) 1952.

2 Monroe, R. T.: Diseases in Old Age: A Clinical and Pathological Study of 7,941 Individuals over 61 Years of Age, Harvard University Monographs in Medicine and Public Health, no. 11, Cambridge, Mass., Harvard *University Press*, 1951.

3. Morrison, L. M.: Arteriosclerosis: Recent Advances in the Dietary and Medicinal Treatment, J. A. M. A. **145**: 1232-1236 (April 21) 1951.

4. Rose, E.: The Diagnosis and Treatment of Thyroid Disease, M. Clin. North America **26**: 1711-1737 (Nov.) 1942.

5. Kountz, W. B., and Chieffi, M.: General Oxidative Processes with Relation to Degenerative Changes in the Body, Geriatrics **2**: 344-358 (Nov.-Dec.) 1947.

MATCHING PLAN FOR INTERNSHIPS

In this issue, a report by the National Interassociation Committee on Internships on the operation of the matching plan this year is reviewed (page 687). The plan was adopted as the official method for the appointment of interns beginning their services this July and was supported by all organizations directly interested in intern training, including the Council on Medical Education and Hospitals, the Association of American Medical Colleges, and the American Hospital Association.

The plan worked very successfully in spite of some initial difficulties. Well over 90% of students were appointed to internships of their first or second choice, and in a comparable percentage of hospitals, interns appointed had been listed by the hospitals as first choice candidates or first alternates. Considering the fact that this was the first year that the matching plan had been in operation, the results exceeded the expectations of the sponsoring organizations. The article points out further that a high proportion of the students who were "matched" with hospitals of their second choice failed to receive appointments to hospitals they had ranked first in their list because the internships in these hospitals had already been filled with candidates the hospital had preferred. Others receiving appointments to hospitals listed as second choice were eliminated as acceptable candidates by the hospitals that the applicants had ranked first in their preference list.

An interesting feature of the plan is that it is entirely self-supporting. Funds for its operation are received through fees from the students and hospitals participating. Member organizations of the National Interassociation Committee do not contribute toward meeting the costs of the matching program except to the extent that they defray the travel costs of their representatives to the committee meetings.

Attention is called to the fact that the plan is a method for appointing interns and that it does not propose to distribute interns nor to limit the number of interns a hospital may appoint. It is evident that the more basic problems relating to intern training are in no way affected by the matching plan. With the 795 hospitals participating in the plan offering a total of 10,414 internships and with 5,691 students making applications for appointment through the matching plan, it was evident to begin with that many hospitals would not be able to fill their requirements. The staffs of hospitals that were unsuccessful in appointing the interns they desired this year should keep in mind the primary purpose and function of the plan, which is simply to facilitate the appointment procedure and to relieve students from undue pressure in making a decision as to the hospital of their choice. To blame the plan for the hospital's lack of success in appointing a house staff is to misunderstand completely the principles by which the plan operates.

The matching plan appears to offer the best available approach to the perennial problem of internship appointments and certainly is to be preferred to other methods tried in the past. It offers the maximum freedom of choice for both the applicant and the hospital in considering appointments. It provides an orderly procedure by which appointments are made, and it removes the element of pressure for a hurried decision on the part of either the hospital or the student. Through the cooperative efforts of the participating organizations, the students themselves, and the hospitals conducting intern training, the matching plan will undoubtedly continue to be improved on. In view of its initial success and the advantages it provides to hospitals and students alike, its acceptance as the method of choice in the appointment of interns seems assured.

THE THYROID AND THE NOSE

For several decades rhinologists and endocrinologists have been aware of a relation between thyroid deficiency and nasal disease. That the connection between the thyroid gland and the nasal cavity is real and not merely fortuitous has been confirmed on a number of occasions by various investigators. Recently Proetz[1] impressed by the frequency with which hypothyroidism suggested itself as a causative factor in nasal disease and headache, described his experiences with 130 patients, all of whom were selected for study because the diagnosis of hypothyroidism was reasonably certain, confusing complications did not exist, and response to thyroid extract therapy was demonstrable. The average basal metabolic rate of the pretreated group varied from −17.5% to −21.6%.

In these patients deficient in thyroid hormone, neither red nor pale coloration of the nasal mucous membrane was pathognomonic, for such hues are also characteristic of other nasal disorders. Although colds were not severe, they were interminable; low grade vasomotor reactions followed the slightest and most varied stimuli. Histological sections of the nasal mucous membrane showed minor chronic inflammatory changes. Asthenia, chilliness, and myxedema occurred rarely, while approximately half of the 130 patients complained of headache. A characteristic feature was the inability of the nasal cavity to respond to conventional therapy. Contrariwise, a high percentage of the patients evinced striking clinical improvement after treatment with thyroid extract; moreover, when this was withdrawn, the offending nasal symptoms recurred.

These studies suggest that patients who are deficient in thyroid hormone and in whom nasal obstruction and headache are prominent symptoms may tend to nasal infection and nasal allergy. These entities can often be corrected, or at least influenced, by the administration of thyroid extract alone. Widespread recognition of the relationship of the thyroid gland and the nasal cavity depends on the awareness not only of rhinologists and endocrinologists but also of other participating medical groups. Variable and vague though the symptoms may be, the basal metabolic rate is helpful, if not infallible, in distinguishing patients suitable for treatment with thyroid extract. A low basal metabolic rate is presumptive evidence; a therapeutic test is conclusive.

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[1] Proetz, A. W.: The Thyroid and the Nose, Ann. Otol., Rhin. & Laryng. 56:328 (June) 1947; Further Observations of the Effects of Thyroid Insufficiency on the Nasal Mucosa, Laryngoscope 60:627 (July) 1950.

MEDICOLEGAL APPLICATION OF BLOOD GROUPING TESTS

In 1937 the Committee on Medicolegal Blood Grouping Tests of the American Medical Association prepared a report concerning the status at that time of the use of blood grouping in forensic medicine.[1] In the intervening 15 years there have been extensive advances in the blood grouping field, stimulated primarily by the discovery of the Rh factor shortly after the report was published. In addition, the attitude of courts toward the blood tests has changed in that they are now more receptive to such evidence. Therefore, under the auspices of the Committee on Medicolegal Problems a new report, prepared in order to bring the subject up-to-date, is presented in this issue of The Journal for the information of physicians and for the guidance of attorneys confronted with such problems.

The most important advance has to do with the developments in the Rh-Hr field. With the antiserums available at the present time the Rh-Hr system considerably increases the chances of solving problems of disputed parentage and has indeed been successfully applied when the A-B-O and M-N tests were inconclusive, not only for disputed paternity but also in interesting problems of interchange of babies in hospitals and in kidnaping cases. The Rh-Hr tests considerably increase the chances of individual identification of fresh wet blood stains, though for dry blood stains the examination is limited to the A-B-O system. As explained in the report, in addition, other blood factors have recently been discovered, which, though not yet sufficiently reliable for practical application, offer promise for the future. Readers desiring a detailed authoritative account of these recent developments are advised to study this report, which has been prepared by several of the leading investigators in the field and which was also submitted to a large body of qualified consultants before publication.

MEASUREMENT OF EXTRACELLULAR FLUID

Measurement of the volume of the extracellular fluid could be of importance clinically if the methods presently used were simple and accurate enough. The standard method of determining the extracellular fluid is based on measuring the inulin space as suggested by Gaudino and associates.[1] Since inulin is rapidly excreted in the urine, a large priming dose of the material must be given. An intravenous infusion of inulin is then administered at a constant rate for about six hours. This length of time is necessary to insure a uniform distribution of the inulin in the extracellular fluid. Recently Deane and co-workers[2] confirmed the observations of others that intravenously administered sucrose is not metabolized in man (though it is in the dog) and found that the volume of distribution of sucrose is the same as that of inulin. But since sucrose has a much smaller molecular weight than inulin (342 for the former and 5,200 for the latter) its velocity of distribution is much greater. Within 180 minutes after the initiation of the sucrose infusion (in adult or young patients) the distribution of sucrose is such that a determination of the extracellular fluid can be made and no priming dose is required; however, in the present form this procedure is not applicable to patients with edema unless the infusion is prolonged.

Walser[3] recently reported the distribution of sulfate labeled with radioactive sulfur in normal subjects. In 15 to 20 minutes after the injection, the radioactive sulfate had distributed itself over a volume numerically equal to the extracellular space. After 20 minutes there was further distribution, which was interpreted as indicating that the material diffuses into other compartments. Within the first 20 minutes it was found that 10 normal subjects gave an average sulfate space equivalent to 16% of the body weight, which is similar to the value obtained by other workers for the extracellular fluid volume determined with inulin. As they are studied further these new tools may provide a more reliable device for either creating a better understanding of the physiological basis of disease or facilitating the diagnosis or treatment of abnormal states of hydration.

POSTGRADUATE CONTINUATION COURSES FOR PHYSICIANS

The semiannual listing of postgraduate continuation courses prepared by the Council on Medical Education and Hospitals appears elsewhere in this issue (page 681). Opportunities for this type of postgraduate education are presented for the six month period beginning July 1. The courses listed total 873 and vary in length from a few days to several months. Many are given on a full-time basis while others are part-time. There are study opportunities for both the physician in general practice and the specialist. Courses are being given in 32 states and the District of Columbia. The subjects include 47 major areas in the field of clinical medicine and the basic sciences. A series of courses for military personnel at medical installations is also included.

Medical schools, state medical societies, hospitals, state and city boards of health, graduate schools of medicine, special medical societies, and state chapters of the American Academy of General Practice continue to be active in presenting this type of postgraduate education.

The Council endeavors to make this listing as complete as possible. Institutions and organizations with courses that are not included in the current list are invited to furnish the Council with details pertaining to the opportunities that they have developed for postgraduate continuation study by physicians.

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1. Report of the Committee on Medicolegal Blood Grouping Tests, J. A. M. A. 108: 2138-2142 (June 19) 1937.

1. Gaudino, M.; Schwartz, I. L., and Levitt, M. F.: Inulin Volume of Distribution as Measure of Extracellular Fluid in Dog and Man, Proc. Soc. Exper. Biol. & Med. 68: 507, 1948.

2. Deane, N.; Schreiner, G. E., and Robertson, J. S.: Velocity of Distribution of Sucrose Between Plasma and Interstitial Fluid, with Reference to Use of Sucrose for Measurement of Extracellular Fluid in Man, J. Clin. Investigation 30: 1463, 1951.

3. Walser, M.: Volume of Distribution of Radiosulfate as Measure of Extracellular Fluid, Proc. Soc. Exper. Biol. & Med. 79: 372, 1952.

ORGANIZATION SECTION

FEDERAL MEDICAL LEGISLATION

Longshoremen's and Harbor Workers' Compensation Act Amendment

H. R. 7811, a bill to amend the Longshoremen's and Harbor Workers' Compensation Act to increase the maximum benefits provided by such act and to extend its provisions to Puerto Rico, was introduced by Representative Thompson of Texas. This bill is identical with H. R. 7517, which has been previously reported in THE JOURNAL.

Withholding Hospitalization Premiums from Federal Workers

Representative Miller of California introduced H. R. 7844. This bill would authorize, under regulations of the Civil Service Commission, the withholding, on request, from compensation of federal employees, amounts for the payment of certain life and hospitalization insurance. Under the present law, the withholding of such deductions is not authorized. Currently federal employees covered by voluntary group hospitalization policies must designate one or more of their number to make collection.

Alcoholics and Narcotics Addicts

H. R. 7619 was introduced by Representative Ramsay of West Virginia and proposes to promote the general welfare by organizing a Bureau of Clinics for treatment of chronic alcoholics and narcotics addicts. The bureau would be an independent office in charge of a director to be named by the President and confirmed by the Senate. The director would be required to have at least 20 years of experience in the cure and rehabilitation of chronic alcoholics and drug addicts and be trained in the medical sciences. The bureau would establish, maintain, and operate a system of farms for treatment and rehabilitation of chronic alcoholics and drug addicts. Medical personnel would be permanently transferred from the Public Health Service to the bureau. Other functions would include assisting the states and private agencies to establish similar farms, to train and educate personnel in approved methods of treatment, cure, and rehabilitation of alcoholics and drug addicts, and to utilize the facilities of the U. S. Employment Service in finding suitable employment for those rehabilitated.

STATE MEDICAL LEGISLATION

Louisiana

Bills Introduced.—H. 9 and H. 10 propose the creation of a **Louisiana board of institutions** to have general control, management, supervision, and direction of certain specified state hospitals and training schools. The board would be authorized to make necessary studies and investigations and to adopt such rules and regulations for the conduct of the institutions as it may deem advisable. H. 54, proposes the **creation of a charity hospital** in the city of Lake Charles for the purpose of furnishing medical and surgical treatment to indigent and destitute sick and wounded persons, without distinction of race and color. H. 111, to amend the Workmen's Compensation Act, proposes to require the employer to furnish to the employee a copy of the **report of any examination made by the employer's physician.** Failure to furnish the employee with such report would bar its use in evidence at a later hearing. H. 112 and H. 156 to amend the Workmen's Compensation Act, propose to require the **employer to furnish reasonable medical, surgical, and hospital services and medicines** not to exceed $1,000 in value, unless the employee refuses to allow them to be furnished by the employer. H. 155, to amend the Workmen's Compensation Act, proposes to require the **employer to furnish reasonable medical, surgical, and hospital services** and medicines for a period of six months following an injury, unless the employee refuses to allow them to be furnished by the employer. H. 239, to amend the Workmen's Compensation Act, proposes that the employer shall furnish **reasonable medical, surgical, and hospital services** and medicines not to exceed $2,000 in value unless the employee refuses to allow them to be furnished. H. 280, proposes the creation of a **Louisiana board of chiropractic examiners** and defines chiropractic as the employment of objective or subjective means to ascertain the alinement of the vertebrae of the human spine, including the use of analytical instruments, and/or x-ray for the purpose of analysis, and the practice of adjusting the vertebrae for the purpose of correcting interference, transmission, and expression, and charge, therefor, directly or indirectly; said practice being without the use of drugs or medicines, surgery, x-ray therapy, or radium therapy. H. 309, proposes to prohibit the sale of **barbiturates** or other hypnotic or somnifacient drugs and **central nervous system stimulants** such as amphetamine and desoxyephedrine, except on the prescription of a person licensed to practice medicine, dentistry, or veterinary medicine. H. 428, proposes certain amendments to the law **relating to coroners,** by, among other things, providing that no body shall be cremated except upon the permit or approval of the coroner. H. 429, to amend the law relating to the office of coroner, proposes among other things, that by mutual agreement between two-thirds of the coroners of the parishes included in any Congressional district of the state approved by the police jury of the parish in which the coroner has agreed, there shall be **established a forensic laboratory** for the mutual use of such coroners and this laboratory and its facilities shall be at the disposal of the respective coroners and law enforcement officers. The bill also proposes that following an autopsy the coroner may retain any specimens or organs of the deceased which in his discretion are desirable or needful for anatomic, bacteriologic, chemical, or toxicological examination as well as for possible evidence before a grand jury or a court. H. 438, proposes the creation of a **Louisiana board of dispensing opticians** for the regulation of the practice of dispensing opticianary, which is defined to be the art and science of optics as applied to the compounding, filling, and adapting of ophthalmic prescriptions, products, and accessories. Dispensing opticians would be prohibited from engaging in the diagnosis of diseases of the human eye or attempting to determine the refractive powers or visual skills of the human eye or in any manner attempting to prescribe for or treat diseases of the eye or to engage in the practice of optometry. H. 446, proposes to authorize certain school boards to make contracts for **group medical, surgical, and hospital benefits and services** with any insurance company, any hospital service and physicians service authorized to do business in the state providing for the rendering of such services and benefits to its employees. S. 162, proposes the creation of a **Louisiana board of chiropractic examiners** and defines chiropractic as the employment of objective or subjective means to ascertain the alinement of the vertebrae of the human spine, including the use of analytical instruments and/or x-ray for the purpose of analysis, and the practice of adjusting the vertebrae for the purpose of correcting interference with nerve transmission and expression, and charged therefor; said practice being without the use of drugs or medicine, surgery, x-ray therapy, or radium therapy.

Mississippi

Bill Enacted.—H. 979, was approved April 12, 1952. It provides an appropriation to defray the expenses of the state board of health in **inspecting private hospitals** in the state which receive monies from the state for charity patients with a view to approving or disapproving such hospital for the reception and treatment of such patients.

New Jersey

Bills Enacted.—A. 551, has become Ch. 285 of the Laws of 1952. It exempts from the **narcotic drug act** certain medicinal preparations which contain narcotic drugs but which also contain some other drug or drugs conferring upon the preparation medicinal qualities other than those possessed by the narcotic drug alone. A. 552, has become Ch. 209 of the Laws of 1952. It prohibits the sale of **hypodermic syringes or needles** or any instrument adapted to the use of administering cocaine or narcotic drugs by subcutaneous injections, except by physicians, dentists, veterinarians, nurses, pharmacists, dealers in surgical instruments, or attendants or interns in hospitals, sanitariums, or institutions. A. 611, has become Ch. 211 of the Laws of 1952. It amends the licensing law applicable to private nursing homes and private hospitals by extending the coverage thereof to convalescent homes.

Rhode Island

Bill Enacted.—H. 955, was approved April 24, 1952. It provides that any person who unlawfully **sells or offers to obtain for any other a diploma** or certificate of learning from any college, university, or institution of learning in any country to which that other is not entitled shall be guilty of a felony and upon conviction shall be sentenced for not more than two years in jail or fined not more than $5,000.

The summary of federal legislation was prepared by the Washington Office of the American Medical Association and the summary of state legislation by the Bureau of Legal Medicine and Legislation.

MEDICAL NEWS

CALIFORNIA

Two Deaths from Botulism.—Botulism has caused two deaths in Walnut Park in Los Angeles County. A third victim is expected to recover. Home-canned mushrooms were the suspected food, and laboratory analysis confirmed the presence of type B botulinus toxin. The fact that the mushrooms were purchased at a market that had imported them from the midwest may account for the finding of type B, rather than type A, which is more usual in California.

University News.—Dr. Douglas M. Kelley, professor of criminology, University of California, Berkeley, has been elected chairman of the section on legal aspects of psychiatry of the American Psychiatric Association. Dr. Kelley served as psychiatrist at the Nuremberg trials for war criminals in Germany and is author of "22 Cells in Nuremberg."——Dr. Gordon E. Goodhart, director of the medical extension of the University of Southern California School of Medicine, was recently appointed associate dean of the medical school.

Intestinal Illness Among Skiers at Donner.—In May the State Department of Public Health reported that an investigation was under way into the cause of gastrointestinal illnesses occurring among visitors to ski resorts at Donner Summit. The illness is characterized by fever, abdominal pain, nausea, vomiting, and diarrhea, and lasts from 24 to 48 hours. Attempts are being made to encourage resort owners in this and other areas to cooperate with local health authorities in planning for safe water supplies and adequate sewage disposal.

State Rabies Advisory Council.—Eleven organizations met recently with the state department of public health to form a state-wide Rabies Advisory Council, which will help develop and propose state legislation for control of rabies. The present concepts in regard to control of rabies have been approved by the California Medical Association, California State Veterinary Medical Association, and the California Conference of Local Health Officers. A final draft of the proposals will probably be submitted to the 1953 state legislature.

Traveling Atomic Energy Exhibit.—An elaborate display on radioiodine in medicine is part of a "traveling show" that will arrive at the University of California at Los Angeles June 21 and remain on daily public exhibit (noon to 9 p. m.) in the Engineering Building through June 28. This traveling atomic energy exhibit was assembled by the Atomic Energy Committee at Oak Ridge, Tenn., and launched on a national tour in cooperation with the National University Extension Association. The exhibit will furnish a summary of uses of radioiodine in diagnosis and therapy. There is no charge for attendance.

Poison in Household Products.—The state health department and the state board of pharmacy have taken steps to prevent the illegal sale of liquid silverware polishes containing sodium cyanide, following the near-death of a Menlo Park child who used a toothbrush that had been dipped in a household polishing solution. According to Dr. Wilton L. Halverson, state director of public health, no polish or similar product containing poison can be sold in California except by licensed pharmacists; however, a few grocers and other merchants have apparently stocked such preparations through ignorance of the state law. Dr. Halverson points out that even drugstore sales are illegal unless labels carry the standard red and white poison warning and list the ingredients.

CONNECTICUT

Senior Students Award Teaching Prize.—The graduating seniors at the Yale University School of Medicine, New Haven, have reversed the usual procedure and awarded a prize to "the most outstanding teacher." He is Dr. Gerald Klatskin, associate professor of medicine, who received the first Francis Gilman Blake Award of the Yale chapter of Nu Sigma Nu. The award, established "to encourage better teaching of the medical sciences by recalling the example set by Dr. Blake," former dean of the Yale School of Medicine, who died Feb. 1, will be given annually after a vote of the graduating class.

DISTRICT OF COLUMBIA

Society News.—The Association for the Advancement of Exceptional Children of the Metropolitan Area of Washington, D. C., Inc., has changed its name to Help for Retarded Children, Inc.

Personals.—Dr. Arthur A. Morris, Washington, D. C., lectured on "The Follow-ups of Psychomotor Epilepsy" before the International College of Surgeons in Madrid, Spain, May 22.——The National Cancer Institute announces the appointment of C. Donald Larsen, Ph.D., as executive secretary of the NCI Cancer Control Committee. He will review applications for special cancer control projects.

Old Timers Meeting.—At its annual "Old Timers Meeting" in Washington, D. C., the Georgetown Clinical Society conferred on Dr. J. Bay Jacobs (class of 1921) the Award of Honor for the year 1952. Dr. Jacobs was formerly associate professor of obstetrics at Georgetown University School of Medicine. The award, conferred annually on the outstanding graduate member, was given for "his years of service as a professor and his ability as an obstetrician."

Radioisotope Laboratory.—The George Washington University Hospital has opened a radioisotope laboratory for research and therapy in cancer and related diseases and for determination of thyroid function in patients with nonmalignant conditions. The laboratory, which has been approved by the Atomic Energy Commission for work with radioactive iodine, phosphorus and gold, is under the direction of Dr. Louis K. Alpert, adjunct clinical professor of medicine.

Appeal for Blood Vessels for Grafts.—An appeal for blood vessels, to be used in persons in the Washington, D. C., community, was issued June 1 by the George Washington University Blood Vessel Bank. Dr. Brian B. Blades, professor of surgery at the George Washington University School of Medicine, announced that physicians will be on call day and night to respond to any donation of blood vessels from recently deceased persons offered by the families. Blood vessels must be secured from persons under 50 years of age within a few hours after death. The deceased persons must not have died of leukemia or as the result of an infectious disease or condition. Calls to tell of the availability of donors may be made to the George Washington University Hospital, STerling 7800, at any hour, day or night. A physician will be dispatched and should arrive within an hour at any spot within the metropolitan area.

GEORGIA

Narcotic Violation.—Dr. Thomas B. Brantley of Hiltonia pleaded guilty to a violation of the federal narcotic laws in the United States District Court at Savannah on May 1. He was sentenced to two years and fined $250. The sentence was suspended, and he was placed on probation for two years.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

ILLINOIS

Report on Syphilis.—Freshly acquired syphilis reported to the state department of public health during the first four months of 1952 for Illinois, exclusive of Chicago, added up to the remarkably low total of 82 cases, an average of less than 2 cases per 100,000 population. Although 1,012 cases of syphilis were reported from the downstate area during the period, all but 82 were relatively long standing cases in which diagnosis was only recently made.

Chicago

Students' Awards to Teachers.—Gold keys, the annual Raymond B. Allen instructorship awards, were recently presented by the students to five faculty members at the University of Illinois College of Medicine. The awards, designed to honor excellency in individual clinical/didactic instructorship rendered by the faculty members to students, were made to Drs. Percival Bailey, professor of neurology; Murray Franklin, assistant professor of internal medicine; Cornelius W. Vermeulen, associate professor of surgery; William V. Whitehorn, associate professor of physiology, and Arnold A. Zimmermann, D. ès S., professor of anatomy.

KANSAS

Personals.—Dr. Vernon M. Winkle, Kansas City, city-county health director, has resigned to become director of local services for the Kansas State Board of Health. He will be succeeded by Dr. Henry Wallace Lane of El Dorado, who will assume his duties on July 1. Dr. Lane, who formerly lived in Kansas City, is El Dorado city and Butler-Greenwood county public health director.——Dr. Ralph H. Major, Kansas City, recently received an honorary doctor of letters degree from the University of Cincinnati College of Medicine.

LOUISIANA

Society News.—At the annual meeting of the New Orleans Graduate Medical Assembly, March 10-13, Dr. Charles B. Odom was elected president; Dr. Andrew V. Friedrichs, president-elect; Dr. Woodard D. Beacham, secretary, and Dr. Robert F. Sharp, treasurer. The sixteenth annual meeting of the assembly will be held March 2-5, 1953, at the Municipal Auditorium, New Orleans.

Cancer Meeting.—A joint meeting of the Louisiana Academy of General Practice, the state university school of medicine, and the state division of the American Cancer Society will be held June 19 at the Hotel Bentley, Alexandria. Dr. Edwin A. Lawrence, professor of surgery, University of Indiana School of Medicine, Indianapolis, the visiting speaker, will discuss "Problems in Gastrointestinal Cancer." A panel on problems in the diagnosis and treatment of cancer will be conducted by members of the faculty from Louisiana State University, New Orleans.

MAINE

State Medical Meeting in Rockland.—The annual session of the Maine Medical Association will be held at The Samoset in Rockland, June 22-24, under the presidency of Dr. C. Harold Jameson of Rockland. Dr. Louis H. Bauer of Hempstead, N. Y., President of the American Medical Association, will deliver an address at the dinner on Monday at 7 p. m. Other out-of-state speakers include:

Harry S. N. Greene, New Haven, Conn., Significance of the Heterotransplantability of Human Cancer Cells.
John W. Strieder, Boston, Surgical Treatment of Pulmonary Infections.
William Stone Jr., Boston, Retention of the Incompletely Covered Foreign Body in Tissues with Special Application to the Eye.
George Van S. Smith, Boston, Treatment of Preeclampsia and Eclampsia with Penicillin.
Sydney S. Gellis, Boston, Causes of Death in the Newborn and What Can Be Done to Prevent Them.
Robert R. Linton, Boston, Treatment of Peripheral Arterial Diseases.
William B. Terhune, New Canaan, Conn., Making the Most of Man.
Harold G. Scheie, Philadelphia, Arteriosclerotic and Hypertensive Vascular Changes in the Fundus.

The second annual Art-Hobby Exhibit will be held during the annual session. The Woman's Auxiliary will hold its annual meeting in conjunction with that of the state association.

MASSACHUSETTS

Society News.—At the annual meeting of the Massachusetts Society of Examining Physicians held at the Harvard Club in Boston, May 7, Dr. John Leo Doherty, Boston, was elected president; Dr. Charles H. Bradford, Boston, president-elect; Dr. Carl Bearse, Boston, vice-president; Dr. Robert C. Gwin, Brookline, treasurer; and Dr. J. Robertson Knowles, Boston, secretary.

Self-Help by Former Tuberculous Patients.—Opportunity Index, said to be the first state-wide placement agency of its kind in the United States, is an organization of and for tuberculosis patients and former patients who have gone through the rehabilitation phase of treatment. It was established Feb. 29 at the Rutland State Sanatorium "to aid the ex-tuberculous in an active program with the eventual goal of suitable employment." The immediate goal is the compilation of a state-wide list of employers willing to hire the more than 3,000 persons who are annually discharged from federal, state, county, and municipal tuberculosis hospitals in Massachusetts.

Regular membership consists of all persons with active or nonactive tuberculosis; associate membership, which will include all nontuberculous persons interested in advancing this project, is open also to former patients who for any reason prefer not to be listed in the first category. Dues are voluntary, ranging from a minimum of 25 cents to a maximum of $5 a year. Mr. David A. Bowers, rehabilitation director, Massachusetts Tuberculosis and Health League, is president of the organization. Information may be obtained by writing to Opportunity Index, Rutland.

MICHIGAN

Students Honor Dr. Crosby.—Elizabeth C. Crosby, Ph.D., professor of anatomy, University of Michigan School of Medicine, Ann Arbor, was recently honored by the university chapter of the Student American Medical Association for her 32 years of service to students of the university. Frank Shubeck, president of the chapter, presented her with a clock inscribed "for distinguished achievement in the field of medical education." Dr. Crosby is the first recipient of this award, which is to be made annually to the person who, in the chapter's estimation, has contributed most to medical education.

MINNESOTA

Outbreaks of Hepatitis.—Cases of infectious hepatitis are occurring in several sections of Minnesota. The disease appears to be widespread, particularly in the west and central parts of the state, according to Dr. C. B. Nelson, director of the division of epidemiology, Minnesota Department of Health. Physicians are requested to report all cases promptly.

MISSOURI

European Tour.—The General Practitioner's Club of Greater St. Louis is sponsoring a 54 day European tour, July 11. Any physician wishing to join the group may contact Dr. John O'Connell, 10300 Lackland Rd., Overland, for details.

Personals.—At the annual meeting of the Missouri Social Hygiene Association in St. Louis on April 18, Dr. Paul J. Zentay, St. Louis, president of the association, received an honorary life membership in the association, "in grateful recognition of his valued leadership and many contributions to social hygiene."——Dr. Roland M. Klemme, professor of surgery, St. Louis University School of Medicine, recently addressed the International College of Surgeons at Bordeaux, France, and at Madrid and Barcelona, Spain. He spoke on "Surgical Treatment of Parkinsonism" in Bordeaux and presented a color movie on "Major Neuralgias" in Madrid. His plans include lectures at the Torina Medical School in Italy, and at the University of Istanbul, Turkey, and presentations before the Surgical Congress in Vienna and Amsterdam on "Malignant Tumors of the Brain."——Dr. R. Dean Woolsey, instructor in surgery, St. Louis University School of Medicine, recently addressed the meeting of the International College of Surgeons in Madrid, Spain, on intervertebral disks.

medical and law schools. Dr. Overholser, who will deliver his lectures at Harvard University next year, is professor of psychiatry at George Washington University Medical School, Washington, D. C., and a past president of the American Psychiatric Association.

Outbreaks of Communicable Diseases.—The U. S. Public Health Service report on communicable diseases for the week ended May 17 includes the following data. For the first 20 weeks of 1952 a total of 563 cases of typhoid were reported as compared with 596 for the corresponding weeks of 1951. Pennsylvania reported the largest number since Jan. 1, namely, 53 cases. Other states reporting more than 25 cases were Texas, 43, Georgia, 40, California, 38, Mississippi, 33, Louisiana, 30, and Colorado, 28. Of 11 cases of Rocky Mountain spotted fever, 6 were in Wyoming, the only state in the mountain division to report any cases. The report from Idaho had not been received. The number of cases of poliomyelitis was 116 (exclusive of Pennsylvania, North Dakota, and Idaho, for which reports had not been received) as compared with 101 for the previous week.

Social Science Research in Health.—An inventory of social science research in health, listing over 300 projects in the United States, has just been completed by the Health Information Foundation of New York City. Adm. William H. P. Blandy, USN (retired), foundation president, said that the project was designed to give an over-all view of social, economic, and psychologic research in health. The material presented in the inventory was secured through 774 public and private organizations, including federal, state, and local agencies, national organizations, and colleges and universities. The material has been indexed by authors, by research organizations conducting the studies, and by the geographic areas of investigation, with abstracts of each project and cross references provided. The foundation says that this is believed to be the first comprehensive listing of social science research in health.

Pediatric Research.—The Playtex Park Research Institute, a nonprofit public service foundation, is devoted to the support of research in the field of child health. The total commitments to the institute, since its founding three years ago by the International Latex Corporation, have grown to more than one-half million dollars. Research supported in 14 states includes investigations in leukemia, blindness, cerebral palsy, prematurity, childbirth, allergy, stillbirths and neonatal deaths, anemia, psychiatry, and other fields of pediatric medicine.

Mr. Walter O. Heinze, president of the International Latex Corporation, Dover, Del., in commenting on the annual report, expressed the hope that the founding of Playtex Park Research Institute would "prove an inspiration to other members of industry to lend greater support to medical research, for the physical and economic well-being of this nation and the world."

Atomic Energy Institute.—The University of Michigan Law School, Ann Arbor, will hold its annual summer institute on "Atomic Energy, Industrial and Legal Problems" June 26-28 at the Law Quadrangle in cooperation with the Michigan Memorial-Phoenix Project. On Thursday, Paul C. Aebersold, Ph.D., director of the isotopes division of the Atomic Energy Commission, will talk on "Producing and Using Radioisotopes." On Friday afternoon provision will be made for visits to the Atomic Energy Laboratories and exhibits, and on Friday evening there will be a panel discussion on "Control of Private Development of Atomic Energy." Saturday morning will be devoted to consideration of "Radiation Hazards of Life and Property." Dr. John C. Bugher, deputy director of the division of biology and medicine of the Atomic Energy Commission, will speak on "Effects of Radiation," and Mr. Orris S. Hiestand Jr., assistant counsel at Oak Ridge Operations of the Atomic Energy Commission, on "Compensation for Injury to Life or Property."

Standard Oil Residency Program.—The medical department of the Standard Oil Company of New Jersey is sponsoring a residency training program in medicine in industry. The major objectives of this program are (1) to provide practical experience and training for qualified graduate physicians to fit them for the practice of medicine in connection with modern industry and (2) to help the candidate qualify for specialist certification or degree. Single graduates of an approved medical school who have already completed at least one, or preferably two, years of internship in an approved hospital, and who have an interest in industrial medical practice are eligible.

The duration of the residency is 18 months: 6 months in the medical department of the Standard Oil Company and its domestic affiliates, and 12 months in the medical department of the Lago Oil and Transport Company, Ltd., a Jersey affiliate operating in Aruba, Netherlands West Indies. The first physician to participate in this program, Dr. Thomas C. Fowlkes of Selma, Ala., was selected from a list of over 50 candidates.

Alcoholism Mortality Declines.—According to the Metropolitan Life Insurance Company, the mortality from alcoholism in the industrial population has declined by 85% over the past 40 years. Deaths from acute and chronic alcoholism averaged 6.3 per 100,000 of the company's industrial policyholders in the period 1911-1917, and 0.9 per 100,000 in 1950. The death rate in the insured group fell sharply in the years immediately preceding the prohibition amendment to the federal constitution, reached its lowest point of 0.7 per 100,000 in 1920, the first year the amendment was in effect, and then moved upward to a second, but lower, peak of 4.9 per 100,000 in 1926. From that point, through the years, a downward trend of the death rate has been maintained. The problem is now being attacked constructively, according to the statisticians, with state and municipal health departments as well as hospitals establishing facilities in increasing numbers for the study and treatment of alcoholism. The National Committee on Alcoholism has committees in many cities operating alcoholism information centers; the National Research Council is guiding research on the probable causes of alcohol addiction; and many welfare and religious agencies and business and industrial organizations are supporting and encouraging the development of programs for the scientific study and control of alcoholism. The statisticians say that "a great deal of additional intensive and coordinated effort is still needed to restore large numbers of men and women to useful lives, and to keep others from becoming excessive drinkers."

Society Elections.—At the annual meeting of the American Gynecological Society, held in Hot Springs, Va., May 12-14, Dr. William P. Healy, New York, was elected president; Dr. Robert A. Kimbrough Jr., Philadelphia, treasurer; and Dr. John I. Brewer, Chicago, secretary.——At the annual convention and scientific meeting of the Society of Biological Psychiatry held in Atlantic City, N. J., May 11, Dr. Abram E. Bennett, Berkeley, was elected president; Dr. Warren S. McCulloch, Chicago, first vice-president; Dr. Ladislas J. Meduna Chicago, second vice-president; and Dr. George N. Thompson, Los Angeles, secretary-treasurer.——At a recent meeting the Southwestern Pediatric Society elected Dr. Clement J. Molony, Beverly Hills, Calif., president; Dr. Harold V. Weatherman, San Diego, Calif., vice-president; and Dr. Carl A. Erickson, Pasadena, Calif., secretary.——At the annual meeting of the American Psychiatric Association in Atlantic City May 12-16 Dr. D. Ewen Cameron of Montreal, Canada, was installed as president; Dr. Kenneth E. Appel of Philadelphia was chosen president-elect; Dr. R. Finley Gayle Jr. of Richmond, Va., secretary; and Dr. Howard W. Potter of Brooklyn, treasurer.——At its annual meeting in Chicago on May 8, the American Board of Dermatology and Syphilology, Inc., elected Dr. Donald M. Pillsbury of Philadelphia, president and Dr. Nelson P. Anderson of Los Angeles, vice-president. Dr. George M. Lewis of New York was reelected secretary-treasurer. The position of executive secretary was created, and Miss Janet Newkirk of New York, formerly assistant secretary, was appointed.

DEATHS IN OTHER COUNTRIES

Dr. Maria Montessori died May 6 at the age of 81. Dr. Montessori was the first woman to receive the medical degree of the University of Rome. She was later appointed lecturer in pedagogic anthropology and established all-day schools for young children in the slum quarters of the city. Montessori societies, training colleges, and research institutes were established in many countries, and annual congresses were held. Her work as an educational reformer has had international influence.

MEETINGS

American Association of Genito-Urinary Surgeons, Seaview Country Club, Absecon, N. J., June 19-21. Dr. Norris J. Heckel, 122 South Michigan Ave., Chicago 3, Secretary.

American Hearing Society, Chicago, June 28. Mrs. Francis E. Lee, 817 14th St. N.W., Washington 5, D. C., Secretary.

American Orthopedic Association, London, England, June 30-July 4. Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

American Urological Association, Chalfonte-Haddon Hall, Atlantic City, N. J., June 23-26. Dr. Charles H. deT. Shivers, Boardwalk National Arcade Bldg., Atlantic City, N. J., Secretary.

American Veterinary Medical Association, Ambassador Hotel, Atlantic City, N. J., June 23-26. Dr. J. C. Hardenbergh, 600 South Michigan Ave., Chicago 5, Executive Secretary.

Idaho State Medical Association, Sun Valley, June 15-18. Dr. Robert S. McKeon, 305 Sun Bldg., Boise, Secretary.

Maine Medical Association, Samoset Hotel, Rockland, June 22-24. Mr. W. Mayo Payson, 142 High Street, Portland 3, Executive Secretary.

Medical Library Association, Lake Placid Club, Lake Placid, N. Y., June 24-27. Miss Caroline Riechers, 1758 West Harrison St., Chicago 12, Secretary.

Post Graduate Medical Assembly of South Texas, Shamrock Hotel, Houston, July 21-23. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secretary.

Rocky Mountain Radiological Society, Denver, Aug. 7-9. Dr. Maurice D. Frazer, 1037 Stuart Bldg., Lincoln, Neb., Secretary.

Upper Peninsula Medical Society, Country Club, Iron Mountain, Mich., June 27-28. Dr. E. Theodore Palm, 412 Superior Ave., Crystal Falls, Mich., Secretary.

West Virginia State Medical Association, The Greenbrier, White Sulphur Springs, July 24-26. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

INTERNATIONAL

Australasian Medical Congress, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, General Secretary.

Commonwealth and Empire Health and Tuberculosis Conference, Central Hall, London, England, July 8-13. Dr. J. H. Harley Williams, Tavistock House North, Tavistock Sq., London, W.C.1, England, Secretary General.

Congress of the International Diabetes Federation, Leyden, Netherlands, July 7-12. Dr. F. Gerritzen, 33, Prinsegracht, The Hague, Netherlands, Secretary.

European Congress of Cardiology, University of London, Bloomsbury, W.C.1, England, Sept. 10-12. Dr. K. Shirley Smith, 35 Wimpole St., London, W.1, England, Secretary.

European Society of Cardiovascular Surgery, Strasbourg, France, Oct. 3-4. Sir James Learmonth, Department of Surgery, University New Buildings, Edinburgh 8, Scotland.

Interamerican Cardiological Congress, Buenos Aires, Argentina, Aug. 31-Sept. 7. Dr. Blas Moia, Larrea 1132, Buenos Aires, Argentina, Secretary-General.

Inter-American Congress of Public Health, Havana, Cuba, Sept. 27-Oct. 1. Pan-American Sanitary Bureau, 2001 Connecticut Ave., Washington, D. C.

Inter-American Congress of Radiology, Mexico City, Mexico, Nov. 2-8. Dr. Guido Torres Martinez, Marsella No. 11, Mexico, D.F., Secretary-General.

International Congress of Biochemistry, Paris, France, July 21-27. Prof. Jean Courtois, 4, Avenue de l'Observatoire, Paris 6^e, France, Secretary.

International Congress of Dermatology and Syphilology, London, England, July 21-26. Dr. Gordon B. Mitchell-Heggs, 5, Lisle St., London, W.C.2, England, General Secretary.

International Congress of Dietetics, Royal Tropical Institute, Amsterdam, The Netherlands, July 7-11. Miss Diane J. Ten Haaf, Educational Bureau of the Nutritional Council, 42 Koninginnegracht, The Hague, Netherlands, General Secretary.

International Congress on Diseases of the Chest, Rio de Janeiro, Brazil, Aug. 24-30. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

International Congress of Haematology, Mar del Plata, Argentina, Sept. 21-26. Dr. Carlos Reussi, Anchorena 1710, Buenos Aires, Argentina, Secretary.

International Congress of the History of Medicine, Nice-Cannes, France, and Monaco, Sept. 8-18. Dr. F. A. Sondervorst, 124 Avenue des Allies, Louvain, Belgium, Secretary-General.

International Congress on Hydatid Disease, Santiago, Chile, Nov. 21-24. Organizing Committee, P. O. Box 9183, Santiago, Chile.

International Congress of Internal Medicine, Friends House, London, N.W.1, Eng. Sept. 15-18. Sir Harold Boldero, 12 Pall Mall East, London, S.W.1, England, Secretary.

International Congress on Medical Records, London, England, Sept. 7-12. Miss Gwen Perkins, 120 C Street S.E., Washington, D. C., Chairman.

International Congress on Neuropathology, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

International Congress of Physical Medicine, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

International Congress of Physiopathology of Animal Reproduction and Artificial Insemination, Copenhagen, Denmark, July 7-10. Prof. Ed. Sorensen, The Royal Veterinary and Agricultural College, Bülowsvej 13, Copenhagen V, Denmark.

International Congress of Urology, The Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 15-18. Dr. John A. Taylor, 2 East 54th St., New York, N. Y., U. S. A., Secretary-General.

International Society of Geographic Pathology, Liège, Belgium, July 15-18. Dr. Fred C. Roulet, Habelstr. 24, Basel, Switzerland, Secretary General.

International Union Against Tuberculosis, Rio de Janeiro, Brazil, Aug. 24-27. Prof. Etienne Bernard, 66 Blvd. St. Michel, Paris 6e, France, Secretary-General.

Neuroradiologic Symposium, Stockholm, Sweden, Sept. 17-20. Docent Ake Lindbom, Symposium Neuroradiologicum, Serafimerlasarettet, Stockholm K., Sweden, Secretary.

World Medical Association, Athens, Greece, Oct. 12-16. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary General.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II*, June 18-20; *Part I*, September. All centers where there are five or more candidates. Exec. Sec., Dr. John P. Hubbard, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* Swampscott, Mass., Sept. 28-Oct. 1. Sec., Dr. C. B. Hickcox, 80 Seymour St., Hartford 15.

American Board of Dermatology and Syphilology: *Written.* Various Centers, September 1953. Applications must be received prior to May 1. All candidates are now required to take the written examination. *Oral.* Philadelphia, October 1953. Ex. Sec., Miss Janet Newkirk, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Various centers and overseas, Oct. 20. Closing date for the acceptance of applications for the written examination was May 1. *Oral.* San Francisco, September or October; New York City, November or December. *Subspecialty:* Exec. Sec.-Treas., Dr. William A. Werrell, 1 West Main Street, Madison 3.

American Board of Obstetrics and Gynecology: *Written.* Various Centers, Feb. 6, 1953. Final date for filing applications is Nov. 1. Sec., Dr. R. L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Written.* Various Centers, January 1953. Final date for filing applications is July 1. *Practical.* Chicago, Oct. 6-10 and New York City, June 6-10, 1953. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

American Board of Orthopaedic Surgery: The deadline for the receipt of applications for the 1953 Part II examinations is Aug. 15. Sec., Dr. Harold A. Sofield, 122 S. Michigan Ave., Chicago.

American Board of Pathology: *Written and Oral.* Pathologic Anatomy and Clinical Pathology examination. Chicago, Oct. 9-11. Sec., Dr. William B. Wartman, 303 E. Chicago Ave., Chicago 11.

American Board of Pediatrics: *Oral.* San Francisco, June 27-29; Chicago, Oct. 24-26; Boston, late November. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Preventive Medicine and Public Health: Cleveland, Oct. 18-20. Sec., Dr. E. L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Psychiatry and Neurology: Chicago, June 13-14. Final date for filing applications was March 15. New York City, Dec. 15-16. Final date for filing applications is Sept. 15. *Sec.-Treas.*, Dr. David A. Boyd, Jr., 102-110 Second Ave. S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Dec. 1-7. Final date for filing application was June 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers. October 1952. Final date for filing application is July 1. Sec., Dr. J. Stewart Rodman, 225 15th St., Philadelphia.

Board of Thoracic Surgery: *Written.* Various Centers, Sept. 5. Sec., Dr. William M. Tuttle, [illegible]lor Ave., Detroit 2.

DEATHS

Luedde, William Henry ⊕ St. Louis; born in Warsaw, Ill., Aug. 13, 1876; St. Louis College of Physicians and Surgeons, 1899; Washington University School of Medicine, St. Louis, 1900; Distinguished Service professor of ophthalmology and director emeritus of the department, St. Louis University School of Medicine; at one time on the faculty of Washington University School of Medicine; an Associate Fellow of the American Medical Association; member of the American Association for the Advancement of Science, Alpha Omega Alpha, American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society, and the Association for Research in Ophthalmology; fellow of the American College of Surgeons; on June 19, 1933, awarded the Leslie Dana Gold Medal by the National Society for the Prevention of Blindness, of which he had been a member of the advisory committee since 1919, in cooperation with the Missouri Association for the Blind; director of the prevention of blindness department of the Missouri Commission for the Blind from 1913 to 1926; active in developing the movement for saving sight in the state; director of St. Louis Society for the Blind; specialist certified by the American Board of Ophthalmology; served during World War I; affiliated with Firmin Desloge Hospital, St. Mary's Hospital and Infirmary, Missouri Baptist Hospital, St. Louis City and St. John's hospitals all in St. Louis, U. S. Marine Hospital, Kirkwood, St. Louis County Hospital in Clayton, and Veterans Administration Hospital in Jefferson City; died in St. Mary's Hospital March 19, aged 75, of coronary disease.

Hendrickson, Russell Robert ⊕ Crookston, Minn.; born in Iron River, Wis., Aug. 17, 1903; University of Minnesota Medical School, Minneapolis, 1928; member of the American College of Chest Physicians; at one time served as medical officer for the Minnesota State Reformatory Hospital in St. Cloud; formerly superintendent and medical director of Buena Vista Sanatorium at Wabasha, superintendent of Fair Oaks Lodge Sanatorium at Wadena and of Sand Beach Sanatorium at Lake Park; before his retirement was medical director and superintendent of Sunny Rest Sanatorium; during World War II was tuberculosis specialist for the U. S. Public Health Service in Alaska and served as chief of the tuberculosis service at the U. S. Marine Hospital in Staten Island, N. Y.; died recently, aged 48, of cerebral embolism.

Howes, Seth Francis Harrison ⊕ Franklin, Mass.; born in Southboro, Mass., Oct. 13, 1891; Harvard Medical School, Boston, 1918; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; formerly superintendent of the Arizona State Hospital in Phoenix and the State Hospital for Mental Diseases in Howard, R. I.; at one time assistant superintendent of the New Hampshire State Hospital at Concord; served during World War II; formerly affiliated with the U. S. Veterans Administration Regional Office in Boston and chief of the neuropsychiatric service at the Veterans Administration Hospital in Manchester, N. H.; died in Worcester (Mass.) City Hospital Feb. 1, aged 60.

McCann, John Joseph ⊕ Ionia, Mich.; born in Westport, Ont., March 11, 1877; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; for many years secretary of the Ionia-Montcalm Counties Medical Society; city physician and city health officer; served during World War I; charter member and past president of the staff, Ionia County Memorial Hospital; member of the board of directors of the Ionia County chapter of the American Red Cross and director at the Ionia County National Bank; died in Miami, Fla., March 20, aged 74, of injuries received when struck by a bus as he was crossing the street.

McCuen, Brooks Walton, Syracuse, N. Y.; born in Chazy, N. Y., Oct. 17, 1887; Syracuse University College of Medicine, 1911; for many years associate professor of surgery at his alma mater; past president of the Onondaga County Medical Society, Syracuse Academy of Medicine, New York Central Lines Association of Surgeons, and the New York and New England Railway Association of Surgeons; specialist certified by the American Board of Surgery; served during World War I; affiliated with St. Joseph's Hospital, where he had been president of the staff; member of the board of directors of Onondaga Sanatorium; died recently, aged 64, of myocardial infarction.

Blakely, Clifton Lenard, Baker, Ore.; State University of Iowa College of Medicine, Iowa City, 1910; member of the American Medical Association; served during World War I; died in St. Elizabeth Hospital March 5, aged 66, of hemiplegia.

Briody, James Francis, Paterson, N. J.; Columbia University College of Physicians and Surgeons, New York, 1898; during World War I served on the Selective Service Board and during World War II was active in civilian defense; formerly city physician; affiliated with St. Joseph and Paterson General hospitals; died March 24, aged 75, of cerebral hemorrhage and tuberculosis of the lungs.

Brown, C. Anna J. ⊕ Seneca Falls, N. Y.; Syracuse University College of Medicine, 1897; served as county coroner; founder of Seneca Falls Hospital; died in Clifton Springs (N. Y.) Sanitarium and Clinic March 31, aged 81, of carcinoma of the stomach.

Bruman, Arthur Karr, San Francisco; Cooper Medical College, San Francisco, 1908; died April 1, aged 72.

Buckley, Edward Simpson Jr., Weston, Mass.; Columbia University College of Physicians and Surgeons, New York, 1947; served during World War II; formerly resident physician at the Peter Bent Brigham Hospital in Boston, where he died March 26, aged 27, of Hodgkin's disease.

Condit, John Christy ⊕ Santa Rosa, Calif.; Cooper Medical College, San Francisco, 1904; an Associate Fellow of the American Medical Association; veteran of the Spanish-American War; died March 16, aged 79, of coronary thrombosis.

Coombs, Miller Oliver ⊕ Joplin, Mo.; the Hahnemann Medical College and Hospital, Chicago, 1912; died in St. John's Hospital March 5, aged 65, of hypertension and angina pectoris.

Corbett, Edward Lawrence, New York; University and Bellevue Hospital Medical College, New York, 1904; also an attorney; served during World War I; died March 17, aged 74, of coronary disease.

Cottingham, Miles Dixon, Kohler, Wis.; Milwaukee Medical College, 1907; retired medical director and industrial surgeon at the Kohler Co.; affiliated with St. Nicholas Hospital and the Memorial Hospital in Sheboygan, Wis.; died March 12, aged 69, of cardiovascular renal disease.

Cox, Roy Herndon, Elgin, Ill.; Rush Medical College, Chicago, 1902; served during World War I; affiliated with Elgin State Hospital, where he died April 8, aged 74.

Craig, Alexander Crawford, Topeka, Kan.; Northwestern University Medical School, Chicago, 1907; member of the American Medical Association; fellow of the American College of Surgeons; on the attending staff, St. Francis Hospital; died Feb. 29, aged 70, of cerebral hemorrhage.

Craven, Young Drayton, Long Beach, Calif.; Kentucky School of Medicine, Louisville, 1896; member of the Missouri State Medical Association and the American Medical Association; died March 18, aged 82, of acute coronary thrombosis.

Crowgey, William B. ⊕ Scott, Ark.; Medical College of Virginia, Richmond, 1911; past president of Lonoke County Medical Society; member of the staff of Pulaski County Hospital and the Dr. C. S. Pettus Hospital in Little Rock; died recently, aged 66, of coronary occlusion, following pneumonia.

⊕ Indicates Fellow of the American Medical Association.

Crumrine, Clarence Acklin, Washington, Pa.; Harvard Medical School, Boston, 1921; specialist certified by the American Board of Internal Medicine; served during World Wars I and II; affiliated with Washington Hospital, where he died March 3, aged 55, of coronary occlusion.

Duncan, John Atkinson ⊕ Marysville, Calif.; Leland Stanford Junior University School of Medicine, San Francisco, 1918; affiliated with Yuba City (Calif.) Community Hospital and Rideout Memorial Hospital; died March 30, aged 64, of coronary heart disease.

Everett, Aaron Green, Friar Point, Miss.; Memphis (Tenn.) Medical College, 1900; for many years physician for Illinois Central Railroad; died in Clarksdale (Miss.) Hospital Feb. 5, aged 77, of injuries received in an automobile accident.

Foster, Samuel Gates, Oil City, Pa.; Eclectic Medical College of the City of New York, 1891; formerly member of the city council and mayor; at one time state assemblyman; in 1940-1941 served as Venango County coroner; held various posts as officer in the National Guard from 1899 to 1913, his last being a four year term as judge advocate; on the board of Franklin (Pa.) Hospital and Oil City Hospital, where he died March 9, aged 84, of carcinoma.

Freedman, Samuel Max ⊕ Dallas, Texas; Jefferson Medical College of Philadelphia, 1901; fellow of the American College of Surgeons; affiliated with St. Paul's, Baylor, Methodist, and Parkland City hospitals; died Feb. 9, aged 73, of myocardial infarction, and hypertension.

Freeman, Roy Esten ⊕ Boise, Idaho; Northwestern University Medical School, Chicago, 1935; member of the American Academy of Dermatology and Syphilology; died recently, aged 48, of coronary occlusion with myocardial infarction.

Gingras, Albert Francis, Medford, Mass.; Tufts College Medical School, Boston, 1933; member of the American Medical Association and the New England Obstetrical and Gynecological Society; formerly city physician; affiliated with Lawrence Memorial Hospital, where he died March 26, aged 43.

Gordin, Stanton Edwin ⊕ Connersville, Ind.; Chicago Homeopathic Medical College, 1896; an Associate Fellow of the American Medical Association; past president of the Fayette-Franklin Counties Medical Society; died March 4, aged 81, of nephritis.

Granger, Eugene Norton, Pascoag, R. I.; Dartmouth Medical School, Hanover, N. H., 1900; member of the American Medical Association; elected to the state senate for three terms; health officer for the town of Burrillville for many years; died March 8, aged 77.

Grosso, Patrick P., Brooklyn; Fordham University School of Medicine, New York, 1916; served during World War I; formerly associated with the U. S. Public Health Service Reserve; died March 27, aged 60, of carcinoma.

Hawkinson, William O., Roanoke, Mo.; Missouri Medical College, St. Louis, 1884; member of the American Medical Association; died March 2, aged 88, of cardiovascular renal disease.

Heilbrunn, Julius, Jersey City, N. J.; Long Island College Hospital, Brooklyn, 1916; member of the American Medical Association; specialist certified by the American Board of Pediatrics; served during World War I; on the staffs of the Margaret Hague Maternity Hospital and Christ Hospital, where he died March 4, aged 60.

Heller, Charles, Chicago; Harvey Medical College, Chicago, 1897; died March 10, aged 79, of coronary occlusion.

Hemminger, Charles J. ⊕ Somerset, Pa.; Eclectic Medical Institute, Cincinnati, 1897; served as a member of the state board of medical education and licensure; past president of the Somerset County Medical Society; at one time practiced in Rockwood, where he was on the school board and town council, and later deputy coroner of Somerset County; served on the school board of Somerset; affiliated with Somerset Community Hospital; died recently, aged 78, of carcinoma of the duodenum.

Heyenga, P. Harren, St. Louis; American Medical College, St. Louis, 1910; died March 15, aged 80, of cardiac decompensation.

Hill, Howard Stephen, Seattle; University of California Medical School, San Francisco, 1898; member of the American Medical Association; died March 25, aged 80.

Hochlerner, Reuben, New York; University of the City of New York Medical Department, New York, 1892; for many years medical examiner in the public schools; died March 28, aged 83, of cerebral hemorrhage.

Horne, Frank Lisle, Berkeley, Calif.; Cooper Medical College, San Francisco, 1910; died in St. Helena Sanitarium and Hospital in Sanitarium March 28, aged 72, of coronary occlusion.

Hugo, John Adam, Nanticoke, Pa.; Medico-Chirurgical College of Philadelphia, 1915; served overseas during World War I; formerly on the staff of the Nanticoke State Hospital; died March 3, aged 64, of hypertension and cerebral hemorrhage.

Hustead, Frank Humbert, Philadelphia; Jefferson Medical College of Philadelphia, 1911; member of the American Medical Association; veteran of the Spanish-American War; served during World War I; formerly on the staffs of the Jefferson, Jewish, and Chestnut Hill hospitals and the Germantown Hospital, where he died March 2, aged 71, of heart disease.

Hutchins, Lewis Reid, Seattle; University of Oregon Medical School, Portland, 1935; member of the American Medical Association; fellow of the American College of Surgeons; clinical associate in surgery at the University of Washington Schools of Dentistry and Medicine; on the staffs of the King County, Doctors, Swedish, Children's Orthopedic, and Maynard hospitals; died March 17, aged 46, of coronary thrombosis.

Izard, Samuel Edward, Newhebron, Miss.; University of Nashville (Tenn.) Medical Department, 1900; past president of the Tri-County Medical Society; served on the city and county school board; died Feb. 4, aged 81, of coronary thrombosis.

Jarrett, Elizabeth, New York; New York Medical College and Hospital for Women, Homeopathic, New York, 1893; served as professor of gynecology at her alma mater; examining physician in public schools; died March 26, aged 87, of arteriosclerosis.

Kasten, Leona Jane ⊕ San Antonio, Texas; University of Texas School of Medicine, Galveston, 1923; died Feb. 18, aged 59.

Kayton, Howard B., Bellerose, N. Y.; Julius-Maximilians-Universität Medizinische Fakultät Würzburg, Bavaria, Germany, 1916; member of the American Medical Association; died in Maimonides Hospital in Brooklyn March 26, aged 61.

Kearby, Howard Denton ⊕ St. Joseph, Mo.; St. Louis University School of Medicine, 1918; died in Missouri Methodist Hospital March 13, aged 64, of myocardial infarction.

Launder, Frank T., San Diego, Calif.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1901; member of the American Medical Association and the Iowa State Medical Society; for many years practiced in Garwin, Iowa, and was a member of the Iowa State Board of Health; past president and for many years a member of the Iowa State Board of Medical Examiners; formerly on the staff of the Deaconess Hospital in Marshall City, Iowa; died March 11, aged 83, of heart disease.

Lillie, Park A., Cloverdale, Ind.; Rush Medical College, Chicago, 1891; died March 8, aged 84, of arteriosclerotic heart disease.

Long, Frank H., Coopersburg, Pa.; Eclectic Medical Institute, Cincinnati, 1909; died March 7, aged 65.

Longstreet, Chalmer Joseph, Binghamton, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1901; member of the American Medical Association; past president of the New York State Sanitary Officers' Association; for many years health officer of Binghamton; on the staff of the City Hospital, where he died March 6, aged 77, of spontaneous pneumothorax and arteriosclerotic heart disease.

McClain, Rodney Paul ⊕ Seattle; Keokuk Medical College, College of Physicians and Surgeons, 1904; Associate Fellow of the American Medical Association; affiliated with Columbus Hospital; medical director of the Northwestern Life Insurance Company; died in the Virginia Mason Hospital March 30, aged 72, of coronary thrombosis.

McCullough, Malcolm Kelley ⊕ Dallas, Texas; University of Texas School of Medicine, Galveston, 1921; clinical assistant professor of ophthalmology at Southwestern Medical School of the University of Texas; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Ophthalmology; affiliated with Baylor University and Parkland hospitals; died recently, aged 56, of coronary thrombosis.

McIntosh, William Verne, Highland Park, Mich.; University of Toronto Faculty of Medicine, Toronto, Canada, 1914; member of the American Medical Association; served during World War I as a member of the Canadian Army Medical Corps; for many years physician for the Highland Park schools; member of the board of health; member and past president of the staff of Highland Park General Hospital; died recently, aged 61, of coronary thrombosis.

McLaughlin, James Henry, Chicago; College of Physicians and Surgeons, medical department of the University of Southern California, Los Angeles, 1917; served overseas during World War I; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with South Chicago Community Hospital and Illinois Central Hospital, where he died March 8, aged 61, of acute pancreatitis, following an operation.

McMahan, Herbert Grimes, Westville, Ind.; Indiana University School of Medicine, Indianapolis, 1936; served during World War II; superintendent of the Norman M. Beatty Memorial Hospital; died in Topeka, Kan., March 4, aged 40, of suffocation caused by fire in his hotel room.

McMeel, James Eugene, South Bend, Ind.; Rush Medical College, Chicago, 1913; member of the American Medical Association; past president of St. Joseph County Medical Society; served during World War I; in 1935 appointed medical supervisor and director of Notre Dame University; past president and for many years a member of the board of health; affiliated with St. Joseph's Hospital, where he had been president of the staff; died March 26, aged 63.

McNelis, Thomas James ⊕ Indiana, Pa.; Jefferson Medical College of Philadelphia, 1913; specialist certified by the American Board of Otolaryngology; past president of the Indiana County Medical Society; affiliated with Indiana Hospital; died in Atlantic City, N. J., March 13, aged 61, of acute coronary occlusion.

Meredith, Lida Orem, Cambridge, Md.; L. R. C. P., of London, and M. R. C. S., of England, 1934; died in Johns Hopkins Hospital, Baltimore, March 7, aged 57, of carcinoma of the breast with metastases.

Miller, Frederick Munger ⊕ Utica, N. Y.; Long Island College Hospital, Brooklyn, 1891; an Associate Fellow of the American Medical Association; affiliated with St. Elizabeth Hospital; died March 11, aged 83, of nephrosclerosis.

Minoka-Hill, Lillie Rosa, Oneida, Wis.; Woman's Medical College of Pennsylvania, Philadelphia, 1899; member of the American Medical Association; died in St. Agnes Hospital, Fond du Lac, March 18, aged 75, of cirrhosis of the liver.

Monfort, Willard ⊕ Highland Park, Mich.; University and Bellevue Hospital Medical College, New York, 1899; emeritus member of the Michigan State Medical Society; died in Henry Ford Hospital, Detroit, recently, aged 78, of coronary occlusion.

Morgan, William Harries, Newark, Ohio; Starling-Ohio Medical College, Columbus, 1909; served during World War I; formerly city health officer; affiliated with Newark City Hospital, where he died Feb. 7, aged 67.

Morse, Russell Wright ⊕ Minneapolis; University of Minnesota Medical School, Minneapolis, 1920; clinical assistant professor of radiology at his alma mater and the University of Minnesota Graduate School; specialist certified by the American Board of Radiology; member of the Radiological Society of North America; affiliated with St. Barnabas Hospital; died in Panama City, Fla., recently, aged 57, of aplastic anemia.

Mraz, John Joseph ⊕ Erie, Pa.; University of Michigan Medical School, Ann Arbor, 1930; affiliated with St. Vincent and Hamot hospitals; died March 12, aged 47, of heart disease.

O'Day, George Frederick, Worcester, Mass.; Harvard Medical School, Boston, 1901; member of the American Medical Association; affiliated with St. Vincent Hospital, where he died Jan. 18, aged 77, of coronary thrombosis.

Palm, Walter Gilbert, Chicago; Chicago College of Medicine and Surgery, 1910; served during World War I; died in South Chicago Hospital April 6, aged 68.

Palmer, William Lucius ⊕ Albert Lea, Minn.; Rush Medical College, Chicago, 1896; fellow of the American College of Surgeons; served during World War I; one of the founders of the Naeve Hospital, where he was on the staff and where he died March 8, aged 84, of diabetes mellitus and nephritis.

Pasley, Harry Walter ⊕ Reedley, Calif.; Indiana University School of Medicine, Indianapolis, 1909; at one time practiced in Indianapolis, where he was superintendent of the Indianapolis City Dispensary; died recently, aged 67, of coronary occlusion and arteriosclerosis.

Paterson, Douglas Campbell, Yonkers, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1903; member of the American Medical Association; served during World War I; emeritus surgeon on the staff of St. John's Riverside Hospital; died in Lawrence Hospital, Bronxville, Feb. 26, aged 71.

Pearce, James H. M., Falkner, Miss.; Memphis (Tenn.) Hospital Medical College, 1904; died Jan. 2, aged 79, of arteriosclerotic hypertension and myocardial failure.

Penick, Rawley Martin, New Orleans; University of Virginia Department of Medicine, Charlottesville, 1893; fellow of the American College of Surgeons; formerly on the staff of the T. E. Schumpert Memorial Sanitarium in Shreveport; died Feb. 18, aged 80, of carcinoma of the lung.

Peters, Joseph Theodore ⊕ South Charleston, W. Va.; Medical College of Virginia, Richmond, 1927; served during World War II; member of the medical staff at Carbide and Carbon Chemicals Corporation; died March 12, aged 49, of a heart attack.

Petty, Charles Napoleon ⊕ Altamont, Kan.; Kansas City Medical College, 1896; affiliated with Mercy Hospital in Parsons; died in Bird City March 16, aged 82, of cerebrovascular accident, hypertension, and cardiac decompensation.

Philson, John Rush, Racine, Ohio; Starling Medical College, Columbus, 1897; member of the American Medical Association; served on the staff of Holzer Hospital in Gallipolis, where he died March 9, aged 75.

Phipps, John Catron, Fries, Va.; Medical College of Virginia, Richmond, 1916; died Feb. 2, aged 65, of coronary thrombosis.

Pijan, Leopold H. ⊕ Chicago; Illinois Medical College, Chicago, 1904; on the staff of the Swedish Covenant Hospital; died March 29, aged 73, of coronary occlusion.

Piper, Arthur Sylvester, Enid, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1911; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; president of the Garfield County Medical Society in 1935; member of the staff of the Enid General Hospital; died recently, aged 71, of cerebral hemorrhage.

Post, Sidney Haymond ⊕ Volga, W. Va.; Jefferson Medical College of Philadelphia, 1901; served during World War I; died in Clarksburg March 8, aged 73, of carcinoma of the nasopharynx.

Poth, Norman Alfred ⊕ Seguin, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1908; past president of the Guadalupe County Medical Society; died recently, aged 70, of acute heart failure.

Pratt, Ezekiel, Brewster, Mass.; Harvard Medical School, Boston, 1912; member of the American Medical Association; school physician; served on the staff of the Symmes Arlington Hospital in Arlington; died Jan. 18, aged 65, of coronary occlusion.

Putnam, William B., Carnegie, Okla.; University of the South Medical Department, Sewanee, Tenn., 1907; died recently, aged 81, of carcinoma.

GOVERNMENT SERVICES

ARMY

Symposium on Military Medicine.—A military-civilian symposium will be held at Murphy Army Hospital in Waltham, Mass., June 23-25. Medical and dental officers of the military services are invited. Arrangements are being made to give reserve officers of the medical and dental corps credit points for full attendance.

Army doctors will make 22 presentations, which will then be discussed by civilian physicians. On Monday evening, dinner at 7 p. m. will be preceded by an informal reception at 6. Dr. Isidor S. Ravdin, professor of surgery, University of Pennsylvania School of Medicine, Philadelphia, will deliver the dinner address on "Shock." The sessions will conclude with a tour of medical and surgical clinics of the Greater Metropolitan Boston area on Wednesday.

Personals.—David B. Dill, Ph.D., scientific director of the Army Chemical Corps Medical Laboratories, addressed the faculty and students of the University of Maryland in May on "Medical Research in Chemical Warfare."——Col. Arthur P. Long, assistant chief, preventive medicine division, Office of the Surgeon General of the Army, was the principal speaker at the forum conducted by the Harvard School of Public Health, Boston, April 10. Col. Long discussed "Military Preventive Medicine in the Far East."

VETERANS ADMINISTRATION

Compensation and Pension Payments Increased.—President Truman signed a bill May 23 which will provide more than 3 million veterans and dependents of deceased veterans with increases in compensation and pension payments, effective July 1. The President also signed a companion bill increasing the amount of income a person may have and still be eligible for pension payments in non-service-connected disability and death cases. Under the old limits, an otherwise eligible veteran or widow having an income in excess of $1,000 annually, without dependents, or $2,500 with dependents, could not qualify for a pension. These limits have been raised to $1,400 and $2,700, respectively.

Congress, in passing these two laws, estimated they will add $202,460,000 to compensation and pension payments during fiscal year 1953.

VA explained that compensation is payable for service-connected disabilities, whereas, pension is payable for permanent and total disability resulting from non-service-connected conditions. Under the new law, all monthly rates of compensation paid veterans for service-connected disabilities rated from 10 to 49% are increased by 5%, while those rated from 50 to 100% are increased by 15%. The new rates will affect the nearly 2 million wartime and post-Korea veterans who were receiving compensation payments on March 31, 1952.

Compensation rates for veterans with peacetime service are 80% of the wartime rates. Nearly 60,000 veterans drawing compensation under peacetime rates receive increases under the new schedule. Statutory allowances provided for specific disabilities such as loss of legs, arms, and eyes, are not affected by the new law. Monthly compensation rates for 560,000 dependents of deceased veterans who died of service-connected disabilities and who served either during wartime or since June 27, 1950, are set by the new law. No increases were provided for widows without children or for dependent parents of deceased veterans.

Psychiatric Residencies Available.—Residencies in psychiatry are available at the Veterans Administration Hospital, Hines, Ill., beginning July 1, 1952, for a period of three years. The residency program is under the direction of the department of psychiatry, University of Illinois. The hospital is within commuting distance of all other psychiatric facilities in the Chicago area. The training is fully accredited by the American Board of Psychiatry and Neurology.

Hospital News.—Dr. Newton Bigelow, commissioner of the department of mental hygiene, State of New York, addressed the staff at the Veterans Administration Hospital, Northport, L. I., May 23, on "The Differential Diagnosis of Schizophrenia."

Personal.—Dr. Irvin J. Cohen, chief, professional services, Veterans Administration Hospital in the Bronx, New York, has been appointed manager of the new 295 bed tuberculosis hospital in Baltimore, Md., now under construction.

PUBLIC HEALTH SERVICE

Trainees from Nepal and Thailand.—Two physicians from Southeast Asia are in the United States for advanced study arranged by the Public Health Service. The training is conducted under federal programs of technical aid to other countries. Dr. Prakashi B. Basnyat is the first public health trainee to come here from Nepal. He teaches at the Civil Medical School there. He has been awarded a residency in surgery at the Veterans Hospital, Aspinwall, Pa.

Dr. Chalerm Prommas, dean of the University of Medical Sciences in Thailand, is making a survey of medical schools under the sponsorship of the Mutual Security Agency. He is reviewing American and European methods of teaching medicine and allied subjects as well as the administration of schools that provide this training. Dr. Prommas plans to begin a long-range program to raise teaching standards in the schools of medical sciences in Thailand.

Report on Toxoplasmosis.—The Public Health Service has just published a brochure on toxoplasmosis (Public Health Service Publication No. 141) by Drs. Jacob Karl Frenkel of the Rocky Mountain Laboratory, National Institutes of Health, and Saul Friedlander of Mercy Hospital, Sacramento, Calif. The cases described in the report were selected from those observed during 1944-1947 in hospitals associated with the University of California Medical School, San Francisco. The clinical histories of five fatal and two surviving cases of neonatal toxoplasmosis are presented, along with autopsy findings of four of the fatal cases. Diagnostic methods and their interpretation are described in detail. Treatment methods are outlined. The report discusses transplacental infection, asymptomatic toxoplasmosis, the occurrence of chorioretinitis, and other clinical syndromes and their significance.

Copies of "Toxoplasmosis" can be purchased for 50 cents from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Insect Control.—A water projects section has been established in Salt Lake City, Utah, by the Communicable Disease Center of the U. S. Public Health Service. Dr. Stanton J. Ware is chief of the new section. The purpose of the new unit is insect prevention and control whenever this is a public health problem in areas where water development projects are underway. The primary objective is to provide guidance on insect prevention and control methods to groups working on new water projects. These measures also will be adapted to operation and maintenance phases of irrigation projects. Later the program will aid in insect elimination and control for water projects completed prior to this time.

The new section will cooperate with state health departments in developing insect vector control organizations. Local communities will be assisted, through the state health departments, in the organization of mosquito abatement districts. To anticipate problems arising from new water development projects, the section will participate with state health departments in making surveys. At present it is engaged in evaluating insect problems associated with river basin developments planned by federal, state, and local agencies in the lower Mississippi, Northeast, Pacific Northwest and Missouri River basins.

FOREIGN LETTERS

ITALY

International Convention of Fluorography.—The First International Convention of Fluorography, attended by more than 700 physicians and medical technicians from Italy and other countries, was held in the sanatorium village of Sondalo. It was promoted by the High Commission of Hygiene and Public Health and was organized by its central committee on fluorography in collaboration with the Italian League Against Tuberculosis and other national institutions, including the Institute for Social Insurance. The aims of the convention were to ascertain the present phase of evolution of the fluorographic method and to determine ways for a closer collaboration between the institutions and the researchers of every country.

Professor Cramarossa, general director of the medical services of the High Commission, discussed the place of fluorography in the services of the public health board. He pointed out that during the last few years fluorography has assumed great importance from many points of view and that limiting it to early diagnosis of tuberculosis would constitute a grave error.

Other diseases, such as those of the circulatory system, are increasing, and their death rate is, in general, much higher than that of tuberculous diseases. In fact, the statistics for 1950 show that the nosological picture of mortality in Italy has changed greatly. The death rate for infectious diseases has decreased about 60% compared with that of the period 1936-1938 and that for diseases of the respiratory system about 62% for the same time. On the other hand, the death rate for diseases of the circulatory system has increased and occupies at present first place, followed by diseases of the nervous system, and then tumors.

Fluorography may be of great help in this field, but it presents many problems. The speaker called attention to the following questions. 1. What aid should or could be given to the fluorographic services? 2. Are stationary centers preferable to mobile centers? 3. Which national or state-approved institutions may contribute to the practical solution of the problem?

In the discussion that followed, Professor Ragazzi, director of the Bureau of Hygiene and Health of Milan, opposed the constitution of a national center of fluorography and asserted that in an organized system of fluorographic centers he would give his choice to stationary centers. He was against the centralization of the results of fluorographic investigations, although he admitted that accurate and controlled statistics may be collected.

Professor Canaperia explained some graphs related to the statistics taken by the central fluorographic office of the High Commission during 1949 and 1950. Fluorograms of about 550,000 persons in all Italy showed that lesions to organs of the chest were found in 13% of them, while the incidence of active pulmonary tuberculosis was about 0.58%. About 1,000 lire was spent for every person with a lesion of whom fluorograms were taken.

General Ferri, M.D., director of the board of military health in the Italian army, reported on the use of fluorography in the military organization. Fluorograms taken of about 85,000 men revealed active pulmonary tuberculosis in 0.82%, results of previous tuberculous processes in 1.6%, and of previous lesions to the pleura and the diaphragm in 4.27%.

Tuberculous Diseases of Thorax.—Professor Costantini, president of the Italian League Against Tuberculosis, reviewed the history of fluorography. He stated that in 1912 Vittorio Maragliano advocated the systematic investigation of apparently healthy persons for concealed tuberculous lesions. Then, during the convention of radiology in Parma in 1932, the institution of a "radiologic card" in schools was advocated. This card was to represent in the field of health what the graded report card represents in the field of learning. But, when De Abreu introduced fluorography in 1936, the problem was solved from the technical and financial point of view. According to competent radiologists, from the diagnostic point of view the fluorogram is, without any doubt, inferior to the radiogram, and, therefore, one should be cautious in establishing a diagnosis; however, fluorography may be of inestimable value in revealing deviations and alterations of an apparently normal radiological picture. But these deviations must be investigated clinically before a definitive diagnosis is established.

Professor Bauer, from the central dispensary of Stockholm, reported on the results of the fluorography campaign organized by the municipal council of the city in 1949. The investigations revealed a great number of tumors and heart lesions, thus justifying the fluorographic examination in those countries in which tuberculosis is decreasing.

Nontuberculous Diseases of Thorax.—Professor Condorelli, a pathologist from the University of Rome, felt that mass fluorographic examination to detect diseases of the cardiovascular apparatus is not less important than that to detect tuberculosis. The disadvantages and harm to society because of lack of means to prevent cardiocirculatory diseases appear evident especially when considering that, for example, rheumatic heart diseases affect many young persons who should give the nation 20 to 30 years of constructive work. Often these heart diseases are concealed in a clinical examination, whereas they can be detected with fluorography, and there are great possibilities of arresting in young persons a heart lesion in its initial phase of growth and of treating a recent anatomic lesion. Among other nontuberculous diseases that may be detected with fluorography, Professor Condorelli spoke of pneumonoconiosis, bronchiectasis, Echinococcus cyst, and tumors of the lung.

LONDON

Annual Report of Medical Council.—From the members' point of view the most disturbing feature of the annual report of the Council of the British Medical Association for 1951 and 1952, which has just been published, is a recommendation that the annual subscription be increased by 50%, from £4.4*s.* to £6.6*s.* On Dec. 31, 1951, the membership was 66,064, as compared with 64,187 on Dec. 31, 1950. By March, 1952, the membership had dropped by 1,000. The present membership represents about 75% of the total profession in the United Kingdom and about 83% of the practicing physicians. The annual general meeting this year is to be a joint one with the Irish Medical Association in Dublin in July. The Council has accepted an invitation to hold the annual meeting jointly with the Canadian Medical Association in Toronto in 1955, "subject to the exchange position being satisfactory." It is reported that "the Council has reconsidered its attitude towards the rule of professional secrecy, and it is with a full sense of the importance of the rule and the undesirability of any departure from it save in exceptional circumstances that the Council recommends: 'that in general it is a practitioner's obligation to observe strictly the rule of professional secrecy by refraining from disclosing voluntarily without the consent of the patient (save with statutory sanction) to any third party information which he has learnt in his professional relationship with the patient; but that there will doubtless occur certain special occasions when it may become a doctor's moral or social duty for the protection of innocent persons to make disclosure to an interested party if the patient, after having been properly and clearly advised as to the appropriate action which he should take, refuses or fails to do so on his own responsibility.' "

The First World Conference on Medical Education, under the sponsorship of the World Medical Association, is to be held in

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The items in these letters are contributed by regular correspondents in the various foreign countries.

London in August, 1953. The Council has offered to place rooms and secretarial staff at the disposal of the conference and is cooperating with the organizing committee appointed by the W. M. A. in making arrangements for the conference.

Marriage and Divorce.—An appendix to the annual report of the British Medical Association consists of the memorandum of evidence submitted by the Council to the Royal Commission on Marriage and Divorce. The Council urges that the divorce court should concern itself with the relief of suffering and hardship affecting both partners and children rather than the allocation of blame for the breach of the marriage contract. It also recommends that means for conciliation should be established by court welfare officers. As the law stands at the moment a man may marry his deceased wife's sister but not his divorced wife's sister. The Council believes that there is no medical reason for this ban and it should therefore be removed; conversely, a woman should be able to marry her deceased or divorced husband's brother. It is of interest to note here that the Medical Women's Federation is not in agreement with this recommendation. There are also recommendations for amending the law relating to mental deficiency, recurrent fits of insanity, and epilepsy as grounds for nullity. The gist of these is that the criterion of mental deficiency as grounds for nullity should be the actual existence of a state of mental deficiency irrespective of whether or not the case has been certified. Epilepsy should not be singled out as grounds for nullity. "There should be a general clause providing for nullity if either party knew of, and concealed from the other, the existence of some grave disease or abnormality likely to be detrimental to the happiness of the marriage." It is also recommended that the woman partner to a nullity suit should always be given the opportunity of examination by a woman physician.

At the moment a divorce can be obtained on the grounds that the defendant "is incurably of unsound mind and has been continuously under care and treatment for a period of at least five years immediately preceding the presentation of the petition." It is proposed that this should be amended so that the criteria are "the actual duration of the mental disorder as shown by medical evidence in each case, the unlikelihood of recovery, and one year's continuous residence as a patient in mental hospitals or licensed homes immediately preceding the presentation of the petition." The following recommendations are included: (1) The legal definition of cruelty in its application to marriage and divorce should be amended so that the nature of the conduct in question is the criterion, regardless of whether such conduct is willful. (2) The fact that a woman leaves her husband under extreme provocation or danger or to protect her children should not prejudice her case in any legal action. In cases of divorce proceedings on grounds of desertion where the deserting partner during some part of the material three years has been a patient in a mental hospital, it is proposed that the court should have full discretion to decide whether the intention to desert has existed continuously during the whole of the period. A further recommendation with regard to desertion is that "where a man deserts his wife and later, having nowhere else to go, forces his way back into the house and cohabits with her, condonation should only be presumed where there is real evidence that the wife has forgiven the husband and has agreed to take him back." It is also recommended that insanity should not be held to be a valid defense to an allegation of adultery or one of unnatural defense (at present sodomy and bestiality are grounds for dissolution at the suit of the wife.) It is further recommended that Lesbianism should be included as grounds for dissolution at the suit of the husband.

It is considered that separation by agreement, when there is no prospect of reconciliation, should be grounds for divorce, and that it should be possible for the petition to be presented by either party or, if they are agreed, by both partners jointly. When there are grounds for divorce but the offended party refuses to take action, it is considered that the offending party should, after a period, be able to sue for divorce. Collusion should only be a discretionary bar to divorce. Finally, it is recommended that marriage should make legitimate a child born before the marriage irrespective of whether at the time of the birth either party was free to marry, and that dissolution of marriage should not deprive a child of legitimate status. In cases of artificial insemination, when the consent of the husband has been obtained, he should for all purposes be regarded as the legal father of the child.

Cross Infection in Hospital.—"The contrast between the remarkable advances in safe surgery, made possible originally by Lister's pioneer work, and the oldfashioned and dangerous procedures still permitted in many hospital wards is unfortunately only too glaring. The practices now revealed should certainly not be tolerated." This is *The Times* in its best denunciatory editorial form, which earned for it the title of "The Thunderer" last century. The occasion, unfortunately, is 1952, and the topic is the state of affairs revealed by a recent article in *The Lancet*. The article, which deals with cross infection in hospital wards, is based on facts ascertained by a team appointed by the Nuffield Provincial Hospitals Trust and the University of Bristol. Records were reviewed from 13 wards in eight hospitals, covering 5,095 patients under care during 1950. The over-all incidence of infection was 9.9%. The highest rate of infection was 21%, and this occurred in a children's ward "specially selected because it was very old and badly constructed, with few amenities." The incidence of infection in the other children's ward included in the survey was 15%. The lowest figure was in a general surgical ward, 3%, and the incidence in the maternity wards was relatively low, 5 to 6%. The rate in wards for special surgery was high: neurosurgery 19%, plastic surgery 18%, and thoracic surgery 15%. The types of infection varied. In the children's wards the common cold headed the list, followed by upper respiratory infections; the organisms most commonly isolated were Staphylococcus aureus and Streptococcus hemolyticus. In the maternity wards the commonest infections were urinary infection and puerperal infection; the organisms involved included Endamoeba coli, Staph. aureus, Str. faecalis, and Str. hemolyticus. In the surgical wards, wound infections were comparatively common, followed by colds and respiratory infections; the causative organisms included Staph. aureus, E. coli, Proteus vulgaris, and Pseudomonas pyocyanea. In three surgical wards it was estimated that 40 patients out of 851 had their stay in the hospital prolonged an average of 21 days per patient, because of an acquired infection.

What is even more disturbing than these actual figures are the conditions found in these and in an additional 11 wards that were investigated. Most of the wards were of the large open type, and the average space between the centers of the beds was 7 ft., compared with the 8 ft. recommended by the Medical Research Council. Nurses were not always provided with adequate means of washing their hands. In one ward there were no washbasins at all; in another enamel basins were used, which had to be filled and emptied in the ward kitchen. No courses of instruction in elementary hygiene were provided for the ward domestic staff, and only one ward had a modern sink unit for washing up crockery and utensils. Only two of the wards had treatment rooms for the dressing of wounds, and only a small minority had bins with lids and foot pedals for the disposal of dirty dressings. "In a ward of a teaching hospital the surgeon had provided suitable bins at his own expense." The patients' bathroom and toilet often opened off the sluice room, and the bathroom was "used for many purposes other than bathing patients," among them, storing dirty linen bins, pillows, and the outdoor clothes of the domestic staff. "The design of most sluice-rooms was a muddle." None of the 24 wards had either bedclothes or oiled floors. The usual practice was to sweep the floor with a broom two or three times daily. Refrigerators that stored milk were used to store pathological specimens as well, pending transfer to the laboratory. In five wards, including an acute surgical ward, masks were never worn. In one ward of 32 patients there were only two clinical thermometers. "It was usual to change the disinfectant for clinical thermometers once a week, but a few wards changed it daily and some every fourteen days—or when someone remembered." In several wards syringes were kept in alcohol, and the procedure for sterilizing sputum mugs was most variable: the contents were usually emptied down the sluice without the containers being disinfected; the mugs were then cleaned in the sink. They were then usually boiled, but "a fair number of wards did not boil them."

PARIS

Occupational Intoxication by Androgens.—Professors Justin-Besançon and H. Dessoille and Drs. H. P. Klotz and H. Cyna report a case of androgen poisoning in a woman chemist, in whose previous medical history allergic reactions to benzene vapors were noted. In May, 1949, she was employed in the manufacture of methyltestosterone. Two months later she had a slight pruriginous erythema, and six months later hair developed on the upper lip and beneath the chin. The voice became harsh, and there was delayed onset of menstruation, with diminution of the flow. There were no changes of behavior and no cardiovascular signs. Cutaneous tests with methyltestosterone evoked further acne lesions on the face and on the chest, as well as maturation of older ones. One month after the discontinuation of her professional activities, the eruption regressed and menstruation became normal. Another test caused reappearance of acne, hirsutism, and delayed menstruation. The patient contends that acne lesions develop whenever she enters a room where androgens or their precursors are handled. The authors stress the necessity of observing carefully these forms of occupational intoxication, of studying means of protection, and of requesting their inclusion on the list of occupational diseases.

Rheumatic Fever Following Parasitic Allergy.—E. Doumer, A. Lorriaux, and C. Belbeniot described a 36-year-old woman who suffered at the ages of 16, 19, and 32 from acute rheumatoid arthritis, refractory to sodium salicylate; moreover, since she was 12 years old she had suffered from sudden, violent crises accompanied by nausea, vomiting, and cephalea, considered by attending physicians as gallbladder attacks. The present crisis began without angina but with violent pains in the lumbar region, followed by multiple arthropathies in the ankles, knees, hands, and wrists; her temperature was 40 C; the hemogram revealed 2,800,000 red corpuscles, 12,400 white corpuscles, and 180,000 platelets; the bleeding time was four minutes. Examination of the fundus of the eye revealed some slight hemorrhages. Salicylate treatment yielded no appreciable results. Penicillin treatment at the daily dose of 4 million I. U. brought the temperature down to 38 to 39 C, but the morbid picture remained unchanged and was not modified by the addition of streptomycin. Five days after her admission to the hospital, the patient complained of sharp pains in the right hypochondrium with nausea and vomiting. The general condition became worse, and extreme asthenia and a yellowish pallor were present; the surgeon had to postpone the contemplated operation. On the following day the patient eliminated a dead Ascaris in her stools, and her condition returned rapidly to normal. After this spontaneous recovery, the authors performed a test in the patient by injecting subcutaneously 0.5 cc. of an extract of A. equi, prepared according to the technique of the Lille Pasteur Institute. This injection, ineffective in two control subjects, provoked in the patient, two hours later, sharp pains in the right epigastrium with cephalea, nausea, and vomiting. These disorders lasted for 24 hours and were followed by multiple arthralgias, intense pruritus, and asthenia for seven days.

In the *Lyon Medical* of March 9, 1952, P. Ravault, M. Pont, and L. Berthier mention a case of rheumatic fever accompanied by myocarditis set off by a food allergy. They stress that it is the first published case of rheumatic fever of allergic origin with cardiac involvement.

Specialized Instruction for Hairdressers.—Recently a number of accidents due to hair dyes have occurred, particularly with paraphenylenediamine, whose use has been forbidden to hairdressers. A ministerial decree has rendered it compulsory to form a test one or two days previous to the application of the dye. This raises the question of the need for instruction for hairdressers in such subjects as anaphylactic reactions and their recognition, toxicity of materials used, occupational diseases, and hygienic measures for clients and for assistants. The National Academy of Medicine appointed a special committee to study hairdressers' schools, and it was decided that this teaching should be entrusted to qualified physicians, appointed by the superior commission for the prophylaxis of venereal diseases.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

THE MATCHING PLAN FOR INTERNSHIP APPOINTMENTS

The National Interassociation Committee on Internships has recently published its report on the first year of operation of the matching plan for the appointment of interns. The report indicates that, in spite of some initial misunderstanding about the purposes and methods of operation of the plan, the results on the whole were quite satisfactory.

The matching plan was adopted as the official method for the appointment of interns by the National Interassociation Committee after a successful trial run last year. This committee is composed of representatives from the Council on Medical Education and Hospitals of the American Medical Association, the Association of American Medical Colleges, the American Hospital Association, the American Protestant Hospital Association, and the Catholic Hospital Association, with liaison representatives from the government services that sponsor intern training programs. The plan is self-supporting, being financed by fees from the senior medical students and the hospitals participating in the program.

Although the actual matching mechanism is rather involved, the principle of the matching plan is simple. Essentially, the senior student's choice of hospitals to which he has applied for appointment is matched with the hospitals' rating of him as an applicant. The student participating in the plan submits to the National Interassociation Committee's office a confidential list ranking the hospitals to which he has applied in the order of his preference for appointment. Participating hospitals, in turn, send to the central office their confidential lists rating the students who have applied for appointment in the order of their preference for the applicant. These lists are then "matched," with the result that each student receives appointment to the hospital to which he has applied highest in order of his ranking which in turn has listed him as acceptable and has an appointment available.

That the plan does give effect to the students' and hospitals' preferences is seen in the results of this year's operation. Of the 5,564 students appointed through the matching plan, 4,698 (84%) were matched with hospitals that the applicants had rated first on their confidential lists. An additional 565 students (10%) received appointments in hospitals that were second in their order of preference. Of those students receiving their second choice of internships, 382 failed to obtain appointment in hospitals that they had rated highest in their preference order because appointments to these hospitals had already been filled with applicants whom the hospital preferred. The remaining 177 students who were matched with hospitals listed as second choice were eliminated as acceptable candidates by their first choice hospitals. From the standpoint of those hospitals that appointed interns through the plan, the results were just as successful, with 92% of the interns appointed having been listed by the hospital as first or second choice (74 and 18% respectively).

The matching plan does not distribute interns nor does it restrict the number of interns a hospital may seek. It was established only to facilitate the appointment procedure and to give effect to the applicants' preferences for internships and the hospitals' preferences for students applying to them. There is no attempt, under the plan, to interfere with the freedom of negotiation between prospective applicants and hospitals. It does require that students accept appointments to hospitals to which they have applied and with which they are matched through the operation of the plan. The hospital likewise agrees to offer internships to those applicants it has listed as desirable who are available for appointment on the basis of the matching procedure.

The National Interassociation Committee on Internships has begun to formulate its plans for the operation of the matching plan for next year. It is expected that both hospitals and students alike will utilize the plan to the fullest extent now that it has been proved successful and to their mutual advantage.

Postgraduate Continuation Courses for Physicians

Compiled by the Council on Medical Education and Hospitals for the Period July 1, 1952 to Jan. 15, 1953

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Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ALLERGY		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	1 Month Personal Course in Allergy	1st of every month, full time	$200.00
	6 Month Personal Course in Allergy	1st of every month, full time	500.00
	Personal Course in Allergy and Related Conditions	September 17, 10 sessions	125.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. At: Receiving Hospital	Allergy Clinic and Conference	Quarterly, part time	25.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Allergy (Medicine PM 36)	November 14-15, full time	20.00
At: Montefiore Hospital	Allergy (Medicine PM 68)	September 11-December 4, part time	50.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 East 106th St., New York 29, N. Y.	Allergy	Arranged, 2 months, part time	50.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	5115-A Allergy	November 10-21, full time	200.00
University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas At: Scott and White Memorial Hospitals	Allergy	Arranged, 2 weeks, full time	*Arranged*
	ANATOMY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Surgical Anatomy Demonstrations and Lectures Upper and Lower Extremities	October 1-January 7, part time	50.00
	Surgical Anatomy Demonstrations and Lectures Thorax, Abdomen and Pelvis	January 14-April 8, part time	50.00
	Surgical Anatomy Demonstrations and Lectures Head and Neck, Thorax, Abdomen and Pelvis; Upper and Lower Extremities	October 1-June 3, part time	250.00
Mercy Hospital, Hillcrest Drive, San Diego, Calif.[2]	Anatomy	Annually, 60 hours per year	50.00
San Diego County General Hospital and Mercy Hospital, San Diego, Calif.	Gross and Applied Anatomy (including demonstrations and dissections on cadaver)	Throughout the academic year, part time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Anatomy of the Extremities on the Cadaver	October 1, 10 sessions	125.00
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1, Md.	Anatomy of Head and Neck as Applied to Eye, Ear, Nose and Throat Boards	October, 35 sessions, part time	75.00
	General Anatomy	Arranged, full or part time	Arranged
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Selected Readings in Physical Anthropology	Quarterly, 12 weeks, part time	Not given
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Applied Anatomy for the General Surgeon	Arranged, part time	375.00
	Anatomy of the Thorax	Arranged, part time	150.00
	Anatomy of the Abdomen	Arranged, part time	150.00
	Applied Anatomy for the Otolaryngologist	Arranged, part time	275.00
	Applied Anatomy of the Urogenital System	Arranged, part time	300.00
	Applied Anatomy for the Anesthesist	Arranged, part time	275.00
	Anatomy for the Orthopedic Surgeon	Arranged, part time	150.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	411-A Anatomy of the Head and Neck	September 29-December 19, part time	90.00
	412-A Anatomy of the Thorax and Its Viscera	January 5-March 27, part time	90.00
	413-A Anatomy of the Abdomen	September 29-December 19, part time	90.00
	414-A Anatomy of the Female Pelvis	September 29-December 19, part time	90.00
	415-A Anatomy of the Genitourinary System	January 5-March 27, part time	90.00
	416-A Anatomy of the Musculoskeletal System	January 5-March 27, part time	90.00
School of Medicine, Western Reserve University, 2109 Adelbert Rd., Cleveland 6, Ohio	Anatomy 11-G	October 1-April 30, part time	75.00 per month
	ANESTHESIOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	*Anesthesiology*	Every 2 months, 4 months, full time	300.00
St. Francis Hospital, 111 Woodland St., Hartford, Conn.	General and Regional Anesthesiology	July, October and January, part or full time, 1 month to 2 years	None
American Society of Anesthesiologists, Inc., 188 W. Randolph St., Chicago, Ill. At: Bellevue-Stratford Hotel, Philadelphia	Annual Refresher Lecture Course	November 11-14, part time	1.50 per lecture hour

References will be found on page 698.

Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ANESTHESIOLOGY—Continued		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Practical 2 Weeks Course in Spinal and Intravenous Anesthesia	Every 2 weeks by appointment	$150.00
	Practical 1 Month Course in Nitrous Oxide and Ether Anesthesia	1st of every month by appointment, full time	125.00
	Practical 1 Month Course in Ether, Nitrous Oxide, Ethylene and Cyclopropane Anesthesia	1st of every month by appointment, full time	200.00
	Practical 2 Weeks Course in Endotracheal Anesthesia	Every 2 weeks by appointment, full time	150.00
Boston University School of Medicine, 80 E. Concord St., Boston, Mass. At: Massachusetts Memorial Hospitals	Postgraduate Course in Clinical Anesthesiology (Course Limited to One Student)	As often as there is an acceptable applicant, 3 months, full time	None
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Anesthesiology for General Physicians	January 8-10, full time	25.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: St. Catherines Hospital	Diagnostic and Therapeutic Nerve Blocking	October, 10 weeks, part time	75.00
At: Jewish Hospital	Anesthesiology	October, 6 weeks, part time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Clinical Anesthesiology	Arranged, 3 months, full time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Applied Anesthesia	October and January, 3 months, full time	300.00
	Anesthetic Technic	October and January, 6 weeks, full time	100.00
	Regional and Spinal Anesthesia	October and January, 6 weeks, full time	100.00
New York State Society of Anesthesiologists, 745 Fifth Ave., New York, N. Y. At: Various Centers throughout the State	Postgraduate Training in Anesthesia	Continuously, hours arranged	None
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	513-A Anesthesiology (Graduate Course)	September 2, 1 year, full time	700.00
	511-A Anesthesiology (for Specialists)	Beginning any Monday, September-June, 2 weeks, full time	150.00
	512-A Regional Anesthesiology	September 2-13 and January 5-16, full time	200.00
	514-A Anesthesiology	September 29-December 19, full time	300.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. At: Graduate Hospital and private offices	Segmental Neuralgias; Relief by Regional Anesthesia[50]	October-May, 1st of each month, 3 weeks, part time	200.00
University of Texas Postgraduate School of Medicine, Temple Division, Temple, Texas At: Scott and White Memorial Hospitals	Anesthesiology	Arranged, 4 weeks, full time	Arranged
	ARTHRITIS		
Office of the Surgeon General, Educational and Training Division, Washington, D. C. At: Army and Navy Hospital, Hot Springs, Ark.	Arthritis and Allied Diseases[40,41,42]	December 1-5, part time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Personal Course in Arthritis and Allied Rheumatic Diseases	September 26, 10 sessions	100.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Jewish Hospital	Arthritis	October, 8 weeks, part time	30.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	5414-A Arthritis and Allied Rheumatic Disorders	July 7-18 and November 10-21, full time	125.00
D. T. Watson School of Physiatrics, Leetsdale, Pa.	Protective Body Mechanics in Arthritis	Arranged, full or part time	10.00
	BACTERIOLOGY		
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Antibiotic Substances	September-December, part time	15.00
	Microbiology Seminar	Every quarter, 12 weeks, part time	15.00
	Recent Advances in Microbiology	September-December, part time	Not given
	Microbial Genetics	September-December, part time	15.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Bacteriology	Arranged, 3 months, part time	100.00
	Immunology	Arranged, 6 weeks, part time	50.00
	Parasitology	Arranged, 6 weeks, part time	75.00
Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa.	Seminars and Investigations on Bacteriology	September-June, part time	None
	BASIC SCIENCE		
University of Southern California, 1200 N. State St., Los Angeles 33, Calif. At: U. S. Naval Hospital, San Diego	Clinical Basic Science Conference	October-June, 34 sessions	Not given
University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, Colo.	Neuro-Anatomy and Neuro-Physiology	September 23-December 30, part time	28.00
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1, Md.	Basic Sciences as They Apply to the Practice of Medicine	October, 32 weeks, part time	50.00
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor, Mich.	Basic Sciences: Pathology	September 29-December 12, full time	250.00
	Basic Sciences: Bacteriology	December 15-19, January 5-9, full time	Not given
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Basic Science Course[1]	October, 9 months, full time	810.00 Surgery 910.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Basic Medical Sciences	September 29-May 23, full time	960.00
	BIOCHEMISTRY		
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Biological Catalysts	September-December, part time	15.00
	Survey of Medical Chemistry	September-December, part time	15.00
	Special Topics	September-December, part time	15.00
	Seminar in Physiological Chemistry	Quarterly, part time	Not given
	Intermediary Metabolism	December-March, part time	15.00
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.[46]	Symposium on Potassium Metabolism	September 22-24, full time	None
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Beth El Hospital	Clinical Biochemistry	October, 10 weeks, part time	30.00
Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa.	Literature Seminars	September-June, part time	None

References will be found on page 698.

Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	CARDIOVASCULAR DISEASE		
California Heart Association, 45 Second St., San Francisco 5, Calif. At: St. Francis Hotel, San Francisco	Postgraduate Symposium on Heart Disease	October 22-25, full time	$17.50
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	*Cardiology*	January 7-March 4, part time	85.00
Los Angeles County Heart Association, 316 S. Bonnie Brae St., Los Angeles 5, Calif. At: Wilshire Ebell Theatre, Los Angeles	22d Annual Postgraduate *Symposium*	October 15-16, full time	10.00
University of Southern California, 1200 N. State St., Los Angeles 33, Calif. At: Los Angeles County Hospital	Cardiology and Vascular Disease	September 15-August 28, full time	1,000.00
Emory University School of Medicine, Emory University, Ga. At: University Hospital	Postgraduate Course in Cardiography	October 20-24, full time	50.00
Chicago Medical Society, 86 E. Randolph St., Chicago, Ill. At: LaSalle Hotel, Chicago	Cardiovascular and Renal Diseases	September 29-October 3, full time	75.00 [51]
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Personal Course in Cardiovascular Disease	September 17, 10 sessions	80.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. At: Massachusetts General Hospital	Cardiovascular Disease	October 1-September 30, full time	800.00 [10]
At: Beth Israel Hospital	Cardiology 1	January 26-May 8, full time	500.00 [10]
At: Boston City Hospital	Cardiology 2	November 5-January 21, part time	75.00 [10]
At: Peter Bent Brigham Hospital	*Clinical Heart Disease*	*July 1-31, full time*	200.00 [10]
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Clinical Cardiology (Medicine PM 29)	Fall, 8 weeks, part time	45.00
	Study and Treatment of the Ambulant Adult Cardiac Patient (Medicine PM 29-C)	October 6-November 28, part time	60.00
	Cardiovascular Diseases (Medicine PM 31)	November 3-11, full time	75.00
	Bedside Clinics in Heart Diseases (Medicine PM 46)	October 13-December 1, part time	30.00
	Heart Disease and Circulatory Dynamics (Medicine PM 48)	October 7-December 9, part time	45.00
At: Montefiore Hospital	Cardiology I (Medicine PM 60)	September 25-June 4, part time	300.00
	Cardiology II (Medicine PM 62)	*September 23-January 27, part time*	150.00
	Cardiology III (Medicine PM 63)	September 23-January 27, part time	200.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37]			
At: Jewish Sanitarium and Hospital for Chronic Disease	Clinical Ballistocardiography	October, 8 weeks, part time	20.00
	Advanced Cardiology and Electrocardiography	*October, 10 weeks, part time*	20.00
At: Coney Island Hospital	Cardiovascular Disease: Clinical and Electrocardiographic Correlation		
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Cardiology	Continuously, except July and August, part time	150.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Diagnosis and Treatment of Diseases of the Heart	Arranged, 3 weeks	75.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	5427-A Auscultation of the Heart	September 8-10, full time	50.00
	5433-A Fluoroscopy of the Heart	September 11-12, full time	30.00
	5434-A Congenital Heart Disease	October 6-8, full time	40.00
	5435-A Rheumatic Heart Disease	October 27-29, full time	40.00
	5436-A Degenerative Heart Disease	January 12-14, full time	40.00
St. Francis Sanatorium for Cardiac Children, Roslyn, N. Y.	A Course of Seminars on Modern Concepts Regarding the Nature and Treatment of Rheumatic Fever and Rheumatic Heart Disease	October-May, part time	None
Cleveland Area Heart Society, 417 Public Square Bldg., Cleveland 13, Ohio At: Western Reserve University	Cardiac Resuscitation Course	September through July, 2 days, full time	20.00 [4]
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa.			
At: Mt. Sinai Hospital, New York, N. Y.	Recent Trends in the Diagnosis and Treatment of Cardiovascular Disease	September 30-October 4, full time	30.00 mbrs. 60.00 non-mbrs.
At: Emory University School of Medicine	Cardiovascular Diseases	October 20-24, full time	30.00 mbrs. 60.00 non-mbrs.
Hahnemann Medical College and Hospital, 230 N. Broad St., Philadelphia 2, Pa.	Postgraduate Course in Cardiology	September-May, part time	100.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Cardiology [21]	October, 8 sessions, part time	80.00
University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas At: Robert B. Green Memorial Hospital, San Antonio Texas	Diagnosis and Treatment of Cardiovascular Disease	January, 2 days	15.00
University of Utah College of Medicine, Salt Lake City, Utah	Congenital Heart Disease	October, 2½ days, full time	25.00
University of Washington School of Medicine, Seattle, Wash.	Recent Advances in Cardiology	June 16-17, full time	20.00
	DERMATOLOGY AND SYPHILOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Dermatology	January 7-March 25, part time	40.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	12 Month Clinical Course in Dermatology	By appointment, full time	1,000.00
	Intensive 2 Week Course in Dermatology	October 13, full time	100.00
	Clinical Refresher Course in Dermatology	Every Monday, 2 or more weeks, full time	75.00 2 weeks
	Personal Course in Dermatology	September 18, 10 sessions	100.00
Harvard Medical School, *Courses for Graduates*, 25 Shattuck St., Boston 15, Mass. At: Massachusetts General Hospital	Dermatology and Syphilology	October 1-September 30, full time	800.00 [10]
Tufts College Medical School, *Postgraduate Division*, 30 Bennet St., Boston 11, Mass. At: Boston Dispensary	Dermatology I	November 3-7, full time	40.00 [10]

References will be found on page 698.

Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
DERMATOLOGY AND SYPHILOLOGY—Continued			
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Dermopathology Seminar	Quarterly, part time	$15.00
	Dermatopathology	September-December, part time	50.00
At: Receiving Hospital	Deep Mycoses	December-March, part time	30.00
	Superficial Mycoses	September-December, part time	30.00
	Seminar in Dermatology	Quarterly, part time	15.00
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Dermatology for Specialists	November 20-22, full time	25.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Montefiore Hospital	Common Skin Diseases and Treatment (Dermatology PM 60)	October 6-December 8, part time	40.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Kings County Hospital	Dermatology for the General Practitioner	October, 8 weeks, part time	20.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Dermatology and Syphilology for the General Practitioner (Seminar)	Arranged, 5 days	75.00
	Dermatology and Syphilology for Specialists (Seminar)	Arranged, 5 days	75.00
	Dermatologic Histopathology (Seminar)	Arranged, 5 days	75.00
	Training for Specialization in Dermatology and Syphilology	3 years	1,000.00
New York University Post-Graduate Medical School, 177 First Ave., New York 16, N. Y. At: Skin and Cancer Unit and affiliated Hospitals	521-A Dermatology and Syphilology in Infants and Children	September 22-26, full time	75.00
	525-A Dermatology and Syphilology (Graduate Course)	October 1, 1 year, full time	700.00
Cleveland Clinic Foundation and Frank E. Bunts Educational Institute, 2020 E. 93d St., Cleveland, Ohio	Dermatology and Syphilology	October 29-30, 1½ days, full time	15.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia 4, Pa.	Dermatology-Syphilology [23]	September 29-May 23, full time	960.00
University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas At: University of Texas Campus, Austin	Office Dermatology	December 1-February 2, 10 sessions	25.00
At: Scott and White Memorial Hospitals [38]	Dermatology and Syphilology	Arranged, 2 weeks, full time	Arranged
DIABETES			
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Personal Course in Medical and Surgical Diabetes	September 17, 10 sessions	100.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. At: New England Deaconess Hospital	Diabetes and Endocrinology in relation to General Medicine	October 6-8, full time	30.00 [10]
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Diabetics and Nutrition (Medicine PM 38)	November 12-13, full time	20.00
DISEASES OF THE CHEST			
Office of the Surgeon General, Educational and Training Division, Washington, D. C. At: Fitzsimons Army Hospital, Denver, Colo.	Pulmonary Diseases [40,41,42,43]	September 22-26, full time	None
American College of Chest Physicians, 112 East Chestnut St., Chicago 11, Ill. At: Hotel New Yorker, New York City	Postgraduate Course in Diseases of the Chest	November 10-15, full time	50.00
At: St. Clair Hotel, Chicago, Ill.	Postgraduate Course in Diseases of the Chest	October 6-10, full time	50.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Pathology of Tuberculosis	September-December, part time	50.00
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Diseases of the Chest for General Physicians	October 16-18, full time	25.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Diseases of the Chest (Medicine PM 37)	November 17-18, full time	20.00
At: Bellevue Hospital	Diseases of the Chest (Medicine PM 80)	October 1, 1 or more months, full time	50.00 per month
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Beth El Hospital	Diseases of the Chest	October, 6 weeks, part time	40.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Diseases of the Chest	October and November, 2 months, part time	100.00
At: Municipal Sanatorium, Otisville, N. Y.	Pulmonary Tuberculosis	Arranged, 3 weeks, full time	175.00
ELECTROCARDIOGRAPHY			
University of California, University Extension School of Medicine, 10845 Le Conte Ave., Los Angeles 24, Calif.	Electrocardiography	November 3-20, part time	20.00
Office of the Surgeon General, Educational and Training Division, Washington, D. C. At: Fitzsimons Army Hospital and University of Colorado School of Medicine, Denver	Clinical Electrocardiography and Postgraduate Conference on Heart Disease [40,41,42,43]	November 10-15, full time	None
Mt. Sinai Hospital of Greater Miami, 4300 Alton Rd., Miami Beach, Fla.	Interpretation of the Electrocardiogram	October 6-December 10, 1952, part time	30.00
	Introduction to Clinical Electrocardiography	September 29-December 19, part time	25.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	2 Week Intensive Course in Electrocardiography and Heart Disease	July 14 and September 29, full time	150.00
	Personal Course in Electrocardiography and Heart Disease	October 29, 10 sessions	125.00
Michael Reese Hospital Postgraduate School, 29th and Ellis Ave., Chicago 16, Ill.	Electrocardiography	August 16-20, full time	Not given
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12, La.	Electrocardiography	December 1-13, full time	100.00
Beth Israel Hospital, Boston, Mass.	Practical Electrocardiography	November 3-7, full time	75.00
	Practical Electrocardiography	November, 10 weeks, part time	75.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.	Electrocardiography I	December 1-5, full time	40.00 [10]
	Electrocardiography II	January 12-14, full time	25.00 [10]
University of Michigan, Department of Postgraduate Medicine, Ann Arbor, Mich.	Electrocardiographic Diagnosis	August 25-30, full time	75.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Electrocardiography	September-June, part time	45.00

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Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ELECTROCARDIOGRAPHY—Continued		
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Intensive Course in Elementary Electrocardiography (Medicine PM 41)	October 20-25 January 5-10, full time	$60.00 60.00
	Intensive Course in Advanced Electrocardiography	October 27-November 1 January 12-17, full time	60.00 60.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37]			
At: Beth El Hospital	Basic Electrocardiography	October, 6 weeks, part time	20.00
At: Jewish Hospital	Electrocardiography for the General Practitioner	October, 6 weeks, part time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Electrocardiography	Fall, 2 weeks, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Electrocardiographic Interpretation	Arranged, 2 weeks	75.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	5123-A Electrocardiography	November 17-21, full time	75.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. At: Wayne University College of Medicine, Detroit, Mich.	Electrocardiography	Fall, 5½ days, full time	30.00 mbrs. 60.00 non-mbrs.
University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas At: Scott and White Memorial Hospitals	Electrocardiography	Arranged, 2 weeks, full time	Arranged
University of Vermont, College of Medicine, College Park, Burlington, Vt. At: Bishop DeGoesbriand Hospital	Electrocardiography	Arranged, 20 hours per semester	5.00
	ELECTROENCEPHALOGRAPHY		
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	642-A Electroencephalography	Arranged, 8 weeks, part time	300.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Electroencephalography	Arranged, 2 weeks, full or part time [20]	200.00
	ENDOCRINOLOGY		
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.			
At: Massachusetts General Hospital	Pediatric Endocrinology and Related Metabolic Disturbances	October 6-11, full time	75.00 [10]
At: New England Deaconess Hospital	Diabetes and Endocrinology in Relation to General Medicine	October 6-8, full time	30.00 [10]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Endocrinology	September-March, part time	30.00
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Endocrinology (Including Diabetes, Corticotropin and Cortisone) for General Physicians	December 4-6, full time	25.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Endocrinological Diseases (Medicine PM 39)	December 3-5, full time	30.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37]			
At: Maimonides Hospital	Metabolic Endocrinology	October, 10 weeks, part time	20.00
At: Jewish Hospital	Gynecologic Endocrinology	October, 10 weeks, part time	20.00
At: Jewish Sanitarium and Hospital for Chronic Disease	Medical and Gynecologic Endocrinology	October, 4 weeks, part time	20.00
New York Academy of Medicine, 2 E. 103d St., New York 29, N. Y.	Hormones in Health and Disease	October 6-17, full time	10.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Endocrinology	Fall, 2 weeks, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	5422-A Endocrinology	July 21-25 and November 10-14, full time	50.00
The Endocrine Society, 1200 N. Walker, Oklahoma City, Okla. At: Roney Plaza Hotel, Miami Beach, Fla.	Fifth Postgraduate Assembly in Endocrinology and Metabolism [3]	November 3-8, full time	75.00
	ENDOSCOPY		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	1 Week Course in Bronchoscopy	By appointment, full time	100.00
	10 Day Practical Course in Cystoscopy	July 7, 21; August 4, 18; September 22; October 6, 20; November 3; December 1, full time	150.00
	Clinical Bronchoscopy	September 24, 8 sessions	150.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. At: Massachusetts General Hospital	Endoscopy	Arranged, 3 or more months, full time	375.00 [10] for 3 months 125.00 each additional month
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Columbia Presbyterian Medical Center	Bronchoscopy (Otolaryngology PM 1)	October 6-24, full time	250.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Jewish Hospital	Gastroscopy	October, 5 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Gastroscopy—Advanced	Arranged, 5 weeks, part time	200.00
	Gastroscopy	Arranged, 2 weeks, part time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Bronchoscopy	Arranged, 4 weeks	150.00
Temple University School of Medicine, 3400 N. Broad St., Philadelphia 40, Pa.	Bronchoesophagology	Fall, September 22-October 3, 2 weeks, full time	250.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. At: Graduate, University, Pennsylvania and Philadelphia General Hospitals	Bronchoesophagology, Gastroscopy and Laryngeal Surgery	First 2 weeks of September, full time	250.00
	FORENSIC MEDICINE		
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	531-A Forensic Medicine (Graduate Course)	September 29, 1 year, full time	700.00
	532-A Forensic Medicine	Arranged, full time	100.00 per month

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Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	FRACTURES		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Intensive 2 Week Course in Fractures and Traumatic Surgery	October 6, full time	$125.00
	Clinical Course in Fractures	1st of every week, 1 or 2 weeks, full time	50.00 1 week
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. At: Massachusetts General Hospital	Special Course in Fractures	September 24, 10 sessions	125.00
	Treatment of Fractures and Other Traumatic Conditions	September 29-October 4, full time	150.00[10]
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Fractures and Traumatic Surgery for General Physicians	November 13-15, full time	25.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Fractures and Allied Trauma	Fall, 4 weeks, full time	200.00
	GASTROENTEROLOGY		
Chicago Medical Society, 86 E. Randolph St., Chicago, Ill. At: LaSalle Hotel, Chicago, Ill.	Diseases of the Gastrointestinal Tract, Liver and Pancreas	October 6-10, full time	75.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	2 Week Personal Course in Gastroscopy and Gastroenterology	September 15, November 3, full time	200.00
	2 Week Course in Gastroenterology	October 27, full time	100.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. At: Receiving Hospital	Gastroenterology	Quarterly, part time	15.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Montefiore Hospital	Gastroenterology (Medicine PM 70)	September 16-December 30, part time	75.00
At: Mt. Sinai Hospital	Gastrointestinal Diseases (Medicine PM 32)	November 24-28, full time	50.00
Joint Committee on Post-Graduate Education, 1313 Bedford St., Brooklyn 16, N. Y.[37] At: Greenpoint Hospital	Gastroenterology	October, 8 weeks, part time	30.00
National Gastroenterological Association, Dept. GSJ, 1819 Broadway, New York 23, N. Y. At: Hotel Statler, N. Y.	Fourth Annual Course in Postgraduate Gastroenterology	October 23-25, full time	Not given
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Gastroenterology	Fall, 1 month, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Clinical Gastroenterology	Arranged, 6 weeks	75.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	5421-A Gastroenterology	October 13-17, full time	45.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. At: University of Pennsylvania Graduate School of Medicine, Philadelphia, Pa.	Gastroenterology	Fall, 5½ days, full time	30.00 mbrs. 60.00 non-mbrs.
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia 4, Pa.	Gastroenterology[23]	September 29-May 23, full time	960.00
Meharry Medical College, Nashville, Tenn.	Gastroenterology	November 10-14, full time	30.00
	GERIATRICS		
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Geriatrics (Medicine PM 47)	September 25-January 29, part time	65.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla.	Postgraduate Course in Geriatrics	January 8-9, full time	10.00
	HEMATOLOGY		
University of California, University Extension, School of Medicine, 10845 Le Conte Ave., Los Angeles 24, Calif. At: Veterans Administration Hospital, Los Angeles	Hematology for General Practitioners	October 1-November 5, part time	30.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	1 Week Personal Course in Hematology	June 16, full time	100.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass. At: Pratt Diagnostic Clinic	Hematology I	December 8-12, full time	40.00[10]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Beginning Hematology	September-December, part time	50.00
	Advanced Hematology	December-March, part time	50.00
At: Receiving Hospital	Review of Clinical Hematology	September-December and December-March, part time	Not given
	Hematology Clinic	September-December and December-March, part time	15.00
Columbia University, 630 W. 168th St., New York 32, N. Y.	Clinical Hematology (*Medicine* PM 66)	September 16-January 20, part time	75.00
At: Montefiore Hospital	Advanced Hematology (Medicine PM 67)	September 23-January 6, part time	75.00
At: Mt. Sinai Hospital	Hematology (Medicine PM 35)	November 19-22, full time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	*Hematology*	Arranged, 2 months, part time	50.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	546-A Clinical Hematology	October 6-December 8, part time	40.00
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore.	Diseases of the Blood and Blood Forming Organs	December 1-3, full time	30.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. At: Bryn Mawr Hospital	Clinical and Laboratory Hematology	First of October, December, 6 weeks, full time	200.00
	HISTOLOGY		
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Advanced Histology	December-March, part time	Not given
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Histology	Arranged, 5 weeks, full time	300.00
	INDUSTRIAL MEDICINE		
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	481-A Industrial Medicine (Graduate Course)	September 29, 1 year, full time	700.00
	481-A Medical Aspects of Compensation	December 8-13, full time	60.00

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Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	INTERNAL MEDICINE		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Basic Science Course in Internal Medicine	September 29-June 5, full time	$800.00
	Differential Diagnosis of Internal Diseases	January 6-March 24, part time	50.00
Mercy Hospital, Hillcrest Drive, San Diego, Calif.	Internal Medicine	Annually, 40 hours a year	None
University of Southern California, 1200 N. State St., Los Angeles 33, Calif.			
At: Los Angeles County Hospital	Internal Medicine (Intensive Review for American Board Examinations)	September 15-26, part time	50.00
	Internal Medicine	September 15-June 1, full time	750.00
University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, Colo.	Diagnosis in Internal Medicine with Emphasis on Physical Diagnosis	Arranged, 6 days, full time	55.00 [10]
Georgetown University School of Medicine, 3900 Reservoir Rd., N. W. Washington 7, D. C.	Internal Medicine	October, 16 sessions, part time	50.00
Office of the Surgeon General, Educational and Training Division, Washington, D. C.			
At: Letterman Army Hospital, San Francisco, Calif.	Current Trends in Internal Medicine [40,41,43]	October 20-24, full time	Not given
At: Walter Reed Army Hospital, Washington 12, D. C.	Internal Medicine [40,41,42]	November 3-8, full time	None
Emory University School of Medicine, Emory University, Ga.			
At: Grady Memorial Hospital, Atlanta, Ga.	General Internal Medicine	Arranged, 2 weeks to 12 months	Arranged [52]
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	2 Week Intensive Course in Internal Medicine	October 13, full time	75.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.			
At: Boston City Hospital	Internal Medicine 1	September 2-August 29, full time	600.00 [10]
	Internal Medicine 2	September 2-November 29, full time	375.00 [10]
	Medical Diagnosis and Treatment	October 1-May 20, part time	100.00 [10]
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.			
At: Pratt Diagnostic Clinic	Review of Recent Advances in Internal Medicine	October 6-11, full time	50.00 [10]
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor, Mich.			
At: University Hospital	Clinical Internal Medicine	October-April, part time	65.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.			
At: Receiving Hospital	Medical Conference	Quarterly, part time	15.00
Columbia University, 630 W. 168th St., New York 32, N. Y.			
At: Montefiore Hospital	Peripheral Vascular Diseases (Medicine PM 65)	September 23-January 6, part time	75.00
At: Mt. Sinai Hospital	Symposium on Internal Medicine (Medicine PM 30)	November 3-December 6, full time	200.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37]			
At: Jewish Hospital and Jewish Sanitarium and Hospital for Chronic Diseases	Internal Medicine	October, 8 weeks, part time	40.00
At: Kings County Hospital	Recent Advances in Internal Medicine	October, 12 weeks, part time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Internal Medicine	Monthly, except July and August, 1 or 2 months, full time	150.00 1 month
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	5418-A Peripheral Vascular Diseases	November 17-21, full time	50.00
At: Bellevue, University and Willard Parker Hospitals	5429-A Internal Medicine (Graduate Course)	September 29, 1 year, full time	700.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla.	Lectures in Internal Medicine	November 5, 12 weeks, part time	25.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa.			
At: Cornell University Medical College and the New York Hospital	Internal Medicine	Fall, 5½ days, full time	30.00 mbrs. 60.00 non-mbrs.
At: Presbyterian Hospital and University of Illinois College of Medicine	Internal Medicine	November 17-22, full time	30.00 mbrs. 60.00 non-mbrs.
At: University of Pittsburgh School of Medicine	Internal Medicine: Selected Subjects	October 6-11, full time	30.00 mbrs. 60.00 non-mbrs.
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Internal Medicine [23]	September 29-May 23, full time	960.00
Tennessee State Medical Association, Postgraduate Committee, 4 S. Dunlap, Memphis 3, Tenn.			
At: 50 Teaching Centers in State	Internal Medicine and the Circulatory Diseases	Continuously, 10 weeks in each center	20.00
University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas			
At: Shannon West Texas Memorial Hospital	Internal Medicine of General Practice	Fall and winter, 12 sessions	25.00
At: M. D. Anderson Hospital, Houston, Texas	Current Drug Practice	September 9-December 16, 15 sessions	25.00
University of Vermont College of Medicine, College Park, Burlington, Vt.			
At: Mary Fletcher Hospital	Internal Medicine	Arranged	None
	Internal Medicine	Arranged, 1 to 3 months	None
	MALIGNANT DISEASE		
Office of the Surgeon General, Educational and Training Division, Washington, D. C.			
At: Walter Reed Army Hospital, Washington 12, D. C.	Exfoliative Cytology and Cancer Detection [40,41,42,45]	September 22-26, full time	None
Dade County Cancer Institute and Dade County Medical Association, 1155 N. W. 14th St., Miami, Fla.	Exfoliative Cytology in Cancer for M.D.'s	Continuously, 6-12 months, full time	150.00 [48]
	Exfoliative Cytology in Cancer	June-December, 1-3 months, full time	150.00 [49]
Columbia University, 630 W. 168th St., New York 32, N. Y.			
At: Columbia-Presbyterian Medical Center	Cancer Diagnosis and Treatment (Cancer PM 1)	November 17-29, full time	100.00

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MALIGNANT DISEASE—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
Cornell University Medical College, 1300 York Ave., New York 21, N. Y.	Exfoliative Cytology (Cancer Detection)	Continuously, except July and August, 2 weeks to 1 year	Variable
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Newer Concepts of the Physiology and Biochemistry of Cancer	Arranged, 6 weeks, part time	$150.00
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore.	Diagnosis and Treatment of Malignant Growths	September 15-19, full time	25.00
Medical College of South Carolina, 16 Lucas St., Charleston, S. C.	Refresher Course in Cancer [22]	November, 1½ days	None

MEDICINE, GENERAL

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
Alabama Academy of General Practice, Montgomery, Ala. At: Medical College of Alabama, Birmingham	Postgraduate Seminar	August, 2 days	None
Medical College of Alabama, 620 S. 20th St., Birmingham, Ala.	Postgraduate Seminars	August, January, 2 days, full time	None
At: Selma, Ala.	Black Belt Postgraduate Seminar	Quarterly, part time	None
At: Winfield, Ala.	Marion County Medical Association	Quarterly, part time	None
California Academy of General Practice, 450 Mission St., San Francisco, Calif. At: Hotel Statler, Los Angeles	1952 Scientific Assembly	November 9-12, full time	5.00
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Differential Diagnosis of Nervous Diseases	September 18-November 6, part time	40.00
	General Medicine	September 30-December 16, part time	50.00
	Diseases of the Kidneys	November 11-December 16, part time	25.00
Los Angeles County Medical Association, 1925 Wilshire Blvd., Los Angeles 5, Calif. At: San Fernando Branch and East Los Angeles Branch	Practical Medicine Lecture Series	Continuously, part time, 1½ hours a week	None
California Medical Association, 450 Sutter St., San Francisco, Calif. At: Santa Barbara	Regional Medical and Surgical Institute	October, 2 days	5.00
At: Fresno	Regional Medical and Surgical Institute	November, 2 days	5.00
San Joaquin County Medical Society, 2633 Pacific Ave., Stockton, Calif. At: Stockton, Calif.	Stockton Postgraduate Study Club	September-December, 8 sessions	10.00
Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15, Calif.	Postgraduate Medical Courses for Practicing Physicians	September 15-19, full time	75.00 [6]
University of California School of Medicine, Medical Extension, Medical Center, San Francisco 22, Calif.	Medicine for General Practitioners	September-December, part time	Not given
At: East Oakland Hospital, Oakland, Calif.	Evening Lectures in Medicine	September-December, part time	Not given
At: Mills Memorial Hospital, San Mateo, Calif.	Annual Postgraduate Assembly	September 17-18	None
San Diego County General Hospital, North End Front St., San Diego 3, Calif.	Annual Postgraduate Assembly	September 8-10, full time	10.00
St. John's Hospital, 22d at Santa Monica Blvd., Santa Monica, Calif.	Medicine for General Practitioners	September 24-December 17, part time	50.00
University of California, University Extension, School of Medicine, 10845 Le Conte Ave., Los Angeles 24, Calif. At: Veterans Administration Hospital, Los Angeles	Three-Day Symposium (Cardiovascular Diseases, Ear, Nose and Throat, Proctology)	August 13-15, full time	50.00
Connecticut State Medical Society, New Haven, Conn.[7] At: Yale School of Medicine	Connecticut Clinical Congress	3d week in September, 3 days	3.00 and 5.00
Emory University School of Medicine, Emory University, Ga. At. Grady Memorial Hospital, Atlanta, Ga.	Postgraduate Course for General Practitioners (Obstetrics, Pediatrics, General Medicine and Surgery)	October 6-10, full time	10.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Intensive Personal Course in Liver and Biliary Tract Diseases	September 22, 1 week, full time	100.00
	Personal Course in Medical Emergencies, Diagnosis and Treatment	September 24, 10 sessions	80.00
	Personal Course in General Medicine	September 24, 10 sessions	100.00
Illinois Academy of General Practice, 7107 S. Jeffrey Ave., Chicago 49, Ill.[8] At: Chicago, Rockford, Joliet, Peoria, Bloomington, Danville, Alton, Belleville and Herrin	Postgraduate Course (Medicine for Today)	October-November, part time	35.00 for mbrs. 75.00 non-mbrs.
Northwestern University Medical School, 303 E. Chicago Ave., Chicago, Ill.	Postgraduate Course (with A. A. G. P.)	Annually, 20 weeks, part time	Not given
Illinois State Medical Society, 30 N. Michigan Ave., Chicago 2, Ill. At: Various Centers in State	Postgraduate Conference	Variable times throughout the year	None
Indiana State Medical Association, 23 E. Ohio St., Indianapolis, Ind.	Telephone Seminars	1st Tuesday night of each month	50¢ per society mbr. per hour
Maryland Academy of General Practice, 25 Alder St., Oakland, Md. At: Baltimore, Md.	Annual Scientific Assembly	October, 1 day	Not given
At: Various Cities in Maryland	One Day Postgraduate Seminars	Every 4 months	Not given
Boston University School of Medicine, 80 E. Concord St., Boston, Mass. At: Evans Memorial, Massachusetts Memorial Hospitals	Postgraduate Course in Medicine	October 22-April 29, part time	100.00
Massachusetts Medical Society, 22 Fenway, Boston 15, Mass. At: Hotel Statler, Boston, Mass.	New England Postgraduate Assembly	October 28-30	Not given
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass. At: Pratt Diagnostic Clinic	Rheumatic Diseases	December 15-19, part time	30.00 [10]
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor, Mich. At: Alpena, Battle Creek, Bay City, Flint, Jackson, Lansing, Midland, Mt. Clemens, Muskegon, Traverse City, Escanaba, Houghton, Iron Mountain, Ironwood, Marquette, Menominee, Sault Ste. Marie	Michigan Program for Graduates in Medicine: Extramural Course	1 day in each center in October and November	None

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References will be found on page 698.

Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	MEDICINE, GENERAL—Continued		
Kansas City Southwest Clinical Society, 630 Shukert Bldg., Kansas City 6, Mo. At: Municipal Auditorium, Kansas City, Mo.	Annual Fall Clinical Conference	October 6-9, full time	$20.00
Omaha Mid-West Clinical Society, 1031 Medical Arts Bldg., Omaha 2, Neb. At: Hotel Paxton	Annual Postgraduate Clinical Assembly	October 27-31, full time	5.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Metabolic Diseases of Bone and Cartilage (Medicine PM 26)	September 27-December 13, part time	50.00
	ACTH and Cortisone (Medicine PM 27)	December 9-23, part time	20.00
	Diseases of the Liver (Medicine PM 33)	November 29-December 6, part time	20.00
	Diseases of the Kidneys (Medicine PM 34)	December 1-2, full time	20.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Jewish Hospital	Hypertension and Nephritis	October, 8 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Peripheral Vascular Disease	Arranged, part time, 2 months	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	General Medicine	Arranged, 4 weeks	100.00
	General Practitioner's Course	Arranged, 4 weeks	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	5424-A Nephritis and Hypertension	July 14-18, full time	50.00
	5130-A Review Course in General Medicine	July 14-25, full time	100.00
	740-A Comprehensive Medicine for Foreign Physicians	September 29-June 19, full time	Not given
University of Buffalo School of Medicine, 24 High St., Buffalo 3, N. Y.	Postgraduate Course for Practitioners	September 15-20, full time	35.00
University of North Carolina School of Medicine and Extension Division, Chapel Hill, N. C. At: Morganton, North Wilkesboro and Elkin	Medical Postgraduate Extension Course	October-November, part time, 6 to 8 weeks	20.00 to 30.00
Southwestern Ohio Society of General Physicians, Cincinnati, Ohio At: University of Cincinnati	Postgraduate Course	October, 8 sessions, part time	10.00 [24]
Hillcrest Memorial Hospital, 1653 E. 12th St., Tulsa, Okla.	Postgraduate Study Course [53]	July-January (Lecture Series)	None
Oklahoma City Clinical Society, 512 Medical Arts Bldg., Oklahoma City, Okla. At: Biltmore Hotel, Oklahoma City	Annual Conference	Fall, 4 days, full time	20.00
American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. At: Massachusetts General Hospital	Rheumatic Diseases	Fall, 5½ days, full time	30.00 mbrs. 60.00 non-mbrs.
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Current Advances in Medicine and Surgery	September 22-26, full time	75.00 [27]
Medical College of South Carolina, Charleston, S. C.	Postgraduate Seminar	November 4-6, full time	Not given
University of South Dakota School of Medical Sciences, Vermillion, S. D.	Postgraduate Medical Course	September-June, or arranged	75.00
Nashville Academy of Medicine, 647 Doctors Bldg., Nashville, Tenn. At: Hermitage Hotel, Nashville	Nashville Medical Assembly	October 29-31, full time	Not given
Postgraduate Medical Assembly of South Texas, 229 Medical Arts Bldg., Houston, Texas At: Shamrock Hotel, Houston	Scientific Meetings	July 21-23, full time	20.00
University of Vermont College of Medicine, College Park, Burlington, Vt.	Postgraduate Course for General Practitioners	1st week in September, full time	25.00 [10]
f General Practice, 504 Security Wenatchee, Wash.	Scientific Assembly	October 31-November 1, full time	None
Interstate Postgraduate Medical Association, 16 N. Carroll St., Madison 3, Wis. At: Municipal Auditorium, Cleveland, Ohio	International Medical Assembly Annual Refresher Postgraduate Course	November 10-13, full time	5.00
	NEUROLOGY AND PSYCHIATRY		
Los Angeles Institute for Psychoanalysis, 407 Commercial Center St., Beverly Hills, Calif.	Professional Training in Psychoanalysis [28]	July-January, arranged, part time	232.00
University of California School of Medicine, Medical Extension, San Francisco 22, Calif. At: The Langley Porter Clinic	Psychiatry and Neurology	August to October, full time	200.00
University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, Colo.	Neurological and Neurosurgical Seminar	August 21-23, full time	25.00 [10]
Joint Committee of State Mental Hospitals, 65 Wethersfield Ave., Hartford, Conn.[7] At: Yale University School of Medicine and Connecticut State Hospital	Connecticut Postgraduate Seminar in Psychiatry and Neurology	October 1-December 12, January 5-May 7, part time	None
Catholic University of America, Washington 17, D. C.	Principles of Psychotherapy	October 1-January 31, part time	30.00 [10]
	Seminar in Psychotherapy II	October 1-January 31, part time	30.00 [10]
	Introduction to Psychiatry	October 1-January 31, part time	30.00 [10]
Office of the Surgeon General, Educational and Training Division, Washington, D. C. At: Fitzsimons Army Hospital, Denver 8, Colo.	Psychotherapeutic Medicine [40,41,43]	August 25-September 6, full time	Not given
At: Letterman Army Hospital, San Francisco, Calif.	Psychotherapeutic Medicine [40,41,43]	August 25-September 6, full time	None
At: Walter Reed Army Hospital, Washington 12, D. C.	Psychotherapeutic Medicine [40,41,43]	August 25-September 6, full time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Personal Course in Clinical Neurology	October 1, 10 sessions	100.00
	Personal Course in Neuropathology	By appointment, part time	20.00 per hour

References will be found on page 698.

Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	NEUROLOGY AND PSYCHIATRY—Continued		
Institute for Psychoanalysis, 661 N. Michigan Ave., Chicago, Ill. At: Illinois Neuropsychiatric Institute	Psychosomatic Demonstrations	October-July, part time	None
Massachusetts Department of Mental Health, Waltham, Mass. At: Metropolitan State Hospital	Review Course in Basic Neurology and Psychiatry	October 5-December 7, part time	None
American Institute for Psychoanalysis, 220 W. 98th St., New York 25, N. Y.	Clinical Conferences on Case Histories [35]	September 9, 15 weeks, part time	$30.00
	The Psychoanalytic Process [36]	September 9, 15 weeks, part time	45.00
	Psychoanalytic Therapy [36]	September 15, 20 weks, part time	60.00
	Continuous Case Seminar [36]	September 12, 10 weeks, part time	30.00
	Clinical Conferences [36]	November 21, 10 weeks, part time	30.00
	Psychoanalysis of Children	September 12, 10 weeks, part time	20.00
	The Neurotic Patient in General Practice	September 9, 5 weeks, part time	10.00
	Readings in Psychoanalysis, Part III	September 11, 15 weks, part time	30.00
At: New School for Social Research	Neuroses and Psychoses	September 30, 15 weks, part time	21.00
	Literary Figures in the Light of Modern Psychoanalysis	September 25, 15 weeks, part time	21.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Columbia Presbyterian Medical Center	Clinical Electroencephalography and Electromyography (Neurology PM 2)	October 1 and January 2, 3 months, full time	150.00
	Symposium on Neurology and Psychiatry (Psychiatry PM 1)	October 6-December 12, full time	250.00
At: Mt. Sinai Hospital	Practical Neuroanatomy and Neuropathology (Neurology PM 31)	October 6-May 11, part time	140.00
	Advanced Practical Neuroanatomy and Neuropathology (Neurology PM 32)	October 2-June 3, part time	100.00
	Clinical Electroencephalography (Neurology PM 33)	October 2-January 15, part time	60.00
	Techniques of Psychotherapy (Psychiatry PM 31)	October 13-February 23, part time	100.00
At: Montefiore Hospital	Neurology PM 60	November 10-December 6, part time	150.00
	Neurology PM 62	September 17-December 10, part tim·	150.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Jewish Sanitarium and Hospital for Chronic Diseases	Clinical Neurology	October, 8 weeks, part time	20.00
At: Jewish Hospital	Child Psychiatry	October, 10 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Readings in Psychoanalytic Literature	Fall, part time	40.00
	Introductory Lecture in Child Psychiatry	Fall, part time	30.00
	Seminar on Psychosomatic Medicine	Fall, part time	40.00
	Introduction to Psychoanalysis	Fall, part time	30.00
	Comprehensive Course in Pschoanalysis	September, 9 months, part time	500.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	641-A Psychiatric and Neurologic Problems in General Practice	January 5-24, part time	100.00
	643-A Treatment Methods in Psychiatry	January 12-March 7, part time	250.00
	644-A Neuroanatomy and Neurophysiology	January 5-March 14, part time	200.00
	646-A Psychiatry in the Practice of Medicine and Pediatrics	Arranged, 3 months, full time	300.00
	647-A Psychiatry and Neurology	September 22-December 13, full time	300.00
	648-A Psychology and Psychodynamics	Arranged, 3 months, part time	200.00
At: Bellevue, University and Goldwater Memorial Hospitals	645-A Neurology (Graduate Course)	September 29, 9 months, full time	700.00
	649-A Psychiatry	September 29, 9 months, full time	700.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.		September 29-December 6, full time	300.00
		September 29-May 23, full time	960.00
University of Utah College of Medicine, Salt Lake City, Utah	Clinical Neurology	October, 5 days, full time	50.00
University of Washington School of Medicine, Seattle, Wash.	Practical Psychiatry	July 21-25, full time	50.00
	NUCLEAR SCIENCE		
Institute of Nuclear Studies, P. O. Box 117, Oak Ridge, Tenn.	Radioisotope Techniques Course	July, August and January, 4 weeks	25.00
	NUTRITION		
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Nutrition	Arranged, 1 month, part time	150.00
	OBSTETRICS AND GYNECOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Genito-Urinary Diseases	November 24-28, full time	60.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Personal Course in Vaginal Approach to Pelvic Surgery	September 22 and November 3, full time, 1 week	100.00
	2 Week Intensive Course in Gynecology	September 8 and October 20, full time	150.00
	2 Week Intensive Course in Obstetrics	September 29 and November 3, full time	150.00
	Personal Course in Gynecologic Surgery	September 25, November 6 and January 8, 4 sessions	100.00
	Personal Course in Office Gynecology	September 24, November 5 and January 7, 4 sessions	100.00
	Personal Course in General and Office Obstetrics	July 16, October 8, 4 sessions	100.00
	Personal Course in Surgical Obstetrics	September 3, November 19 and January 7, 4 sessions	100.00
State University of Iowa College of Medicine, Iowa City, Iowa At: University Hospital	Obstetrics and Gynecology Conference	November, 1 day	5.00

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Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	OBSTETRICS AND GYNECOLOGY—Continued		
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 16, Mass.			
At: Boston Lying-in Hospital	Clinical Obstetrics	September and October, 1 or 2 months, full time	$150.00[10] a month
At: Free Hospital for Women	Gynecology 2	July, August and September, 1 month, full time	150.00[10] a month
	Pathology of Obstetrics and Gynecology	January 8-May 14, part time	150.00[10]
At: Massachusetts General Hospital	Gynecology 3	September 8-20, full time	150.00[10]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.			
At: H. Kiefer Hospital	Obstetrics (Limit 10)	Quarterly, part time	50.00
University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.	Gynecology for Specialists	November 3-5, full time	25.00
Columbia University, 630 W. 168th St., New York 32, N. Y.			
At: Margaret Hague Maternity Hospital	Internship Training (Obstetrics PM)	First of each month, 3 months, full time	350.00
	Observation Course (Obstetrics PM 81)	First of each month, 1 month, full time	100.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37]			
At: St. John's Episcopal Hospital	Office Gynecology	October, 8 weeks, part time	20.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Obstetrics and Gynecology including Manikin Obstetrics and Operative Gynecology (Cadaver)	October, 2 months, full time	250.00
	Manikin Obstetrics	Arranged, 4 weeks, part time	150.00
	Clinical Course in Office and General Obstetrics	Arranged, 4 weeks, part time	100.00
	Clinical and Operative Gynecology (Cadaver)	Arranged, 6 weeks, part time	175.00
	Clinical Gynecology	Arranged, 6 weeks, part time	75.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	560-A Gynecological Malignancy	October 13-24, full time	150.00
	561-A Seminar in Gynecology	October 6-November 1, full time	150.00
	562-A Gynecology: Diagnosis and Office Treatment	October 27-November 17, part time	50.00
	563-A Gynecology: Diagnosis and Office Treatment	September 15-October 17, part time	75.00
	564-A Infertility	December 8-10, full time	40.00
	566-A Cystoscopy and Endoscopy	September 15-October 17, part time	75.00
	567-A Gynecological Endocrinology	October 7-December 6, part time	125.00
	568-A Vaginal Cytology[29]	October 7-December 4, part time	100.00
	569-A Surgical Anatomy as Applied to Gynecology: Cadaver[29]	October 14-November 11, part time	175.00
At: Beth Israel Hospital	734-A Gynecology[29]	September 2-December 19, part time	Not given
Southern Pediatric Seminar, Saluda, N. C.	Obstetrics and Gynecology	July 28-August 2, full time	25.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Gynecology-Obstetrics[23]	September 29-May 23, full time	960.00
Meharry Medical College, Nashville, Tenn.	Gynecology and Prenatal Care	November 10-14, full time	30.00
University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas			
At: St. Joseph's Infirmary (Classroom)	Obstetrics	September 4-December 11, part time	25.00
At: Robert B. Green Memorial Hospital, San Antonio	Practical Gynecology	October, 2 days	15.00
At: Scott and White Memorial Hospitals[38]	Obstetrics	August, 4 weeks, full time	Arranged
University of Washington School of Medicine, Seattle, Wash.	Obstetrics	July 7-11, full time	50.00
	ONCOLOGY		
Columbia University, 630 W. 168th St., New York 32, N. Y.			
At: Montefiore Hospital	Neoplastic Diseases (Medicine PM 72)	September 16-January 27, part time	150.00
	OPHTHALMOLOGY AND OTOLARYNGOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Basic Science Course in Otolaryngology	September 29-June 5, full time	800.00
	Otolaryngology	October 28-December 16, part time	30.00
Children's Memorial Hospital, 707 Fullerton Ave., Chicago, Ill.	Neuromuscular Anomalies of the Eyes	November 9-14, full time	75.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	2 Week Clinical Course in Otolaryngology	1st of every week, full time	50.00
	2 Week Clinical Course in Ophthalmology	1st of every week, full time	50.00
Northwestern University Medical School, 303 E. Chicago Ave., Chicago 11, Ill.	Endaural Otologic Surgery and Audiology	September 15-October 15, full time	500.00
	Postgraduate Basic Course in Ophthalmology	October-June, full time	800.00
At: Wesley Memorial Hospital	Fellow in Fenestration Surgery	Arranged, 2 to 6 months, full time	500.00
University of Illinois College of Medicine, 1853 West Polk St., Chicago 12, Ill.	Postgraduate Course in Ophthalmology	July 1-December 23, full time	500.00
	Seminar in Otolaryngology	September 29-October 4, full time	75.00
	Basic Otolaryngology	October 6-June 19, full time	750.00
	Bronchoesophagology	September 15-29, full time	150.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12, La.	Ocular Pathology	December 1-6, full time	100.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.			
At: Harvard and Massachusetts Eye and Ear Infirmary	Basic Sciences in Ophthalmology[33]	September 29 to March 7, full time	700.00[10]
	Basic Sciences in Otolaryngology[34]	November 3-March 28, full time	925.00[10]
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.			
At: Boston City Hospital	Neuro-Ophthalmology	November 17-21, full time	75.00[10]
	Ophthalmology	October 20-November 14, January 5-30, part time	75.00[10]
Ophthalmic Study Council, 243 Charles St., Boston, Mass.			
At: Westbrook Jr. College, Portland, Me.	Lancaster Courses in Ophthalmology	June 23-September 6, full time	325.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Basic Ophthalmology (Limit 10)	September-June, full time	900.00

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Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OPHTHALMOLOGY AND OTOLARYNGOLOGY—Continued			
American Academy of Ophthalmology and Otolaryngology, 100 First Avenue Bldg., Rochester, Minn. At: Palmer House, Chicago, Ill.	Instruction Courses	October 12-17	$2.00 per hour
Home Study Course	Ophthalmology and Otolaryngology	September-June, part time	20.00 each course
Washington University School of Medicine, Euclid Ave. and Kingshighway, St. Louis 10, Mo.	Basic Ophthalmology Course	September 15, 8 months, full time	800.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Montefiore Hospital	Elementary Ophthalmoscopy (Ophthalmology PM 60)	January 5-March 2, part time	30.00
At: Columbia Presbyterian Medical Center	Glaucoma (Ophthalmology PM 62)	October 20-December 8, part time	30.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Jewish Sanitarium and Hospital for Chronic Diseases	Ophthalmoscopy	October, 8 weeks, part time	20.00
New York Eye and Ear Infirmary, 218 2d Ave., New York, N. Y.	Neuro-Ophthalmology	Arranged, 1 month, part time	75.00
	Roentgenology—Eye	Arranged, 1 week, part time	50.00
	Clinical Histopathology of the Eye	Arranged, 1 month, part time	75.00
	Perimetry	Arranged, 4 weeks, part time	75.00
	Refraction	Arranged, 8 weeks, part time	150.00
	Operative Eye Surgery	Arranged, 4 weeks, part time	150.00
	Glaucoma	Arranged, 8 weeks, part time	75.00
	Ophthalmoscopy	Arranged, 4 weeks, part time	75.00
	Slit Lamp Microscopy	Arranged, 4 weeks, part time	100.00
	Anomalies of Extraocular Muscles	Arranged, 4 weeks, part time	75.00
	Plastic Eye Surgery	Arranged, 4 weeks, part time	150.00
	Physiological Optics in Clinical Practice	Arranged, 6 weeks, part time	100.00
	External Diseases of the Eye	Arranged, 4 weeks, part time	75.00
	Roentgenology	Arranged, 2 weeks, part time	75.00
	Allergy of the Eyes and Upper Respiratory Tract	Arranged, 24 sessions	150.00
	Rehabilitation of the Hard of Hearing	Arranged, 4 sessions	75.00
	Didactic and Operative Work in Rhinoplasty and Otoplasty	Arranged, 4 weeks, part time	250.00
	The Conservative Management of Acute Sinusitis and Chronic Rhinitis	Arranged, 6 sessions	75.00
	Resuscitation	Arranged, 1 day	50.00
	Clinical Physio-Pathology of the Ear	Arranged, part time	150.00
	Broncho-esophagology and Laryngeal Surgery	Arranged, part time	250.00
New York Polyclinic Medical School and Hospital, 315 W. 50th St., New York 19, N. Y.	Otolaryngology and Ophthalmology	October 1, 9 months, full time	1,000.00
	Otolaryngology and Ophthalmology, Including Cadaver, EENT and Refraction	October, January, 3 months	600.00
	Refraction	Arranged, 4 weeks, part time	100.00
	Advanced Otology	Arranged, 2 weeks, part time	250.00
	Ophthalmology, Including Cadaver Ophthalmology and Refraction	Arranged, 3 months, part time	300.00
	Head and Neck Dissection	Arranged, 4 weeks, part time	150.00
	Motor Anomalies	Arranged, 4 weeks, part time	50.00
	Surgical Anatomy of Nose Accessory Sinuses	Arranged, 4 weeks, part time	150.00
	Operative Otology (Cadaver)	Arranged, 4 weeks, part time	100.00
	Operative Ophthalmology (Cadaver)	Arranged, 4 weeks, part time	100.00
	Operative Nose and Throat (Cadaver)	Arranged, 4 weeks, part time	150.00
	Seminar in Ophthalmology and Otolaryngology	Arranged, 5 days, full time	50.00
	Clinical Ophthalmology	Arranged, 6 weeks or 3 months, part time	75.00 [11]
	Clinical Otolaryngology	Arranged, 6 weeks or 3 months, part time	100.00 [12]
	Clinical Ophthalmology and Otolaryngology	Arranged, 6 weeks or 3 months, full time	150.00 [13]
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	574-A Surgery of the Eye (for Specialists)	October 27-November 1, full time	100.00
	575-A Differential Diagnosis with the Slit Lamp (for Specialists)	November 10-14, part time	75.00
	576-A Ophthalmology (Graduate Course)	September 29-June 19, full time	700.00
	577-A External Diseases of the Eye (for Specialists)	November 3-7, part time	75.00
	578-A Ocular Expressions of Systemic Disease	November 10-14, part time	50.00
	579-A Neuro-Ophthalmology	July 14-18, part time	50.00
	5710-A Perimetry	July 14-18, part time	50.00
	5711-A Ophthalmoscopy	July 21-25, part time	50.00
	5713-A Ocular Therapeutics	July 21-25, part time	50.00
	5714-A Histopathology	September 22-27, part time	100.00
	591-A Intensive Course in Basic Sciences	September 15-26, part time	100.00
	592-A Histopathology of the Ear, Nose and Throat	September 15-26, part time	100.00
	593-A Basic Sciences of Otorhinolaryngology (Graduate Course)	September 29-June 19, full time	700.00
	594-A Endaural Surgery	November 10-21, full time	150.00
	596-A Anatomy of the Head, Neck and Thorax for Otolaryngologists	September 29-November 7, part time	125.00
	597-A Neuroanatomy, Neuro-Physiology and Neuro-Otology	November 3-7, full time	75.00
	598-A Pathology of the Head and Neck	November 24-December 19, part time	125.00
	599-A Allery for Otolaryngologists	December 8-12, full time	75.00
	5910-A Surgery of the Head and Neck	January 5-16, full time	200.00
	5911-A Advanced Surgery of the Neck	September 29-October 10, full time	250.00
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore.	Diseases of the Uvea [29]	November 17-19, full time	30.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Otolaryngology [23]	September 29-May 23, full time	960.00
	Ophthalmology [23]	September 29-May 23, full time	960.00

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Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OPHTHALMOLOGY AND OTOLARYNGOLOGY—Continued			
University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas			
At: The Texas Medical Center	Endaural Surgery and Audiology	July 16-19, full time	$25.00
At: Scott and White Memorial Hospitals[38]	Ophthalmology and Otolaryngology	Arranged, 1 week, full time	Arranged
Virginia Society of Ophthalmology and Otolaryngology, Box 98, Charlottesville, Va.			
At: University of Virginia	Postgraduate Clinical Session	November, 4 days, full time	35.00
ORTHOPEDIC SURGERY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Diseases and Injuries of Bones and Joints	July 7-31, full time	100.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.			
At: Children's Hospital	Orthopedic Surgery 1	Arranged, 1-12 months, full time	800.00[10] for 12 mo.
At: Massachusetts General Hospital	Orthopedic Surgery 2	Arranged, 3 to 12 months	800.00[10] for 12 mo.
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Orthopedics in General Practice	November, 6 weeks, full time	60.00
	Orthopedics of the Foot	Arranged, 8 weeks, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Orthopedic Surgery for General Surgeons	Arranged, 3 months, part time	75.00
	Operative Orthopedics (Cadaver)	Arranged, 5 periods, part time	100.00
	Advanced Orthopedics of the Foot	Arranged, 8 periods, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	581-A Basic Sciences as Related to Orthopedic Surgery (Graduate Course)	January 5-June 19, full time	450.00
	582-A Orthopedics in General Practice	October 13-17, full time	75.00
	583-A Anatomy for Orthopedic Surgeons	January 5-9, full time	90.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Orthopedics[23]	September 29-May 23, full time	960.00
University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas			
At: Memorial Hospital, Corpus Christi, Texas	Office Orthopedics	September 10-November 12, 10 sessions	25.00
At: Scott and White Memorial Hospitals[38]	Orthopedic Surgery	Arranged, 2 weeks, full time	Arranged
PATHOLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	General and Surgical Pathology	September 30-June 4, part time	175.00
Office of the Surgeon General, Educational and Training Division, Washington, D. C.			
At: Armed Forces Institute of Pathology, Washington, D. C.	Pathology of Ionizing Radiation Injury[40,41,42,43,44]	October 20-24, full time	None
	Forensic Pathology[40,41,42,43,44]	December 1-5, full time	None
At: Walter Reed Army Hospital, Washington 12, D. C.	Recent Advances and Developments in Clinical Pathology[40,41,42,44]	December 8-12, full time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	12 Month Department Course in Gross and Surgical Pathology	By appointment, full time	900.00
	12 Month Course in Gross and Microscopic Pathology	By appointment, full time	500.00
	6 Month Clinical Course in Gross and Surgical Pathology	By appointment, full time	500.00
	Personal Course in Surgical Pathology on Selective Subjects	By appointment, 1 or 2 weeks, full time	15.00 per hour
	Personal Course in Surgical Pathology	By appointment every month, 2 or 4 weeks, full time	150.00 for 2 weeks
	Personal Course in Pathology and Laboratory Medicine	September 17, 10 sessions	100.00
Johns Hopkins University School of Medicine, 710 N. Washington St., Baltimore 5, Md.			
At: Johns Hopkins Hospital	Gynecology and Gynecological Pathology	October 1 and December 1, 2 months, full time	150.00
University of Maryland School of Medicine, 31 S. Greene St., Baltimore 1, Md.	Neuropathology[14]	Arranged, 6 months, full time	200.00 plus 10.00 lab. fee
	Pathology[15]	Arranged, 6 months, full time	150.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.			
At: Free Hospital for Women	Pathology of Obstetrics and Gynecology	January 8-May 14, part time	150.00[10]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Gynecologic Pathology	December-March, part time	50.00
	Pathology of Parasitic Diseases	December-March, part time	50.00
	Neuropathology	December-March, part time	50.00
Columbia University, 630 W. 168th St., New York 32, N. Y.			
At: Mt. Sinai Hospital	General and Special Pathology (Pathology PM 30)	October 18-January 24, part time	60.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Pathology	Arranged, 16 weeks, part time	200.00
	Clinical Pathology	Arranged, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Surgical Pathology	Arranged, 3 months, part time	300.00
	Urological Pathology	Arranged, 3 months, part time	50.00
	Blood Transfusions	Arranged, 2 weeks, part time	100.00
	Pathology	Arranged, 3 months, part time	300.00
	Pathology	Arranged, 12 months, part time	1,000.00
	Pathology for Surgeons	Arranged, 1 month, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	441-A Gynecological Pathology (for Specialists)	September 17-December 31, part time	100.00
	442-A Surgical Pathology (for Specialists)	September 16-January 13, part time	200.00
	443-A Principles of Pathology	September 16-January 13, part time	200.00
	444-A Special Pathology for Surgeons[30]	January 8-June 18, part time	125.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla.	Surgical Pathology	October, 10 weeks, part time	50.00
Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa.	Gynecologic and Obstetric Pathology, Urologic Pathology	September-June, part time	None
University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas			
At: Scott and White Memorial Hospitals	Surgical Pathology and Pathologic Anatomy	Arranged, 2 weeks, full time	Arranged
	Clinical Pathology	Arranged, 2 weeks, full time	Arranged

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Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PEDIATRICS		
University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, Colo. At: Estes Park, Colo.	Medical Social Problems in Obstetrics and Pediatrics	September 17-19, full time	$5.00
Delaware Academy of General Practice, 1305 New Road, Wilmington 5, Del. At: Wilmington General Hospital	Pediatrics for the General Practitioner	September 18, 11 sessions	60.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	12 Month Department Course in Pediatrics Personal Course in Pediatrics	July 1, full time September 24, 10 sessions	750.00 80.00
State University of Iowa, College of Medicine, Iowa City, Iowa At: University Hospital	Pediatrics Conference	September, 1 day	5.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.			
At: Massachusetts General Hospital	Pediatrics 1 Pediatric Endocrinology and Related Metabolic Disturbances	October 1-May 29, full time October 6-11, full time	800.00 [10] 75.00 [10]
At: Children's Hospital	Pediatrics 2	September 2-December 19, January 5-April 24, full time	500.00 [10]
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass. At: The Boston Floating Hospital	Pediatrics I Pediatrics II	November 3-7, full time November 3-15, part time	40.00 [10] 50.00 [10]
University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Pediatrics	October, 3½ days, full time	30.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Allergy in Children (Pediatrics PM 31)	October 10-December 12, part time	40.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Clinical Pediatrics Pediatric Allergy Course I	Continuously, 1, 3, 6, 9 and 12 months October, 20 weeks, part time	..... [10] 300.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Pediatrics	Arranged, 4 weeks, part time	75.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	611-A Clinical Pediatrics 612-A Clinical Pediatrics 614-A Review of Clinical Pediatrics 618-A Pediatric Cardiology	November 3-January 16, part time October 6-31, part time September 8-13, full time September 15-19, full time	125.00 150.00 50.00 50.00
At: Willard Parker Hospital	617-A Communicable Diseases	January 12-16, full time	50.00
At: University, Bellevue, St. Vincent's, Memorial and Irvington Hospitals for Cardiac Children	6110-A Pediatrics (Graduate Course)	September 22, 9-12 months, full time	700.00
Southern Pediatric Seminar, Saluda, N. C.	Pediatric Course	July 14-26, full time	45.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla. At: Tulsa, Okla.	Postgraduate Course in Pediatrics	December 5-6, full time	10.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Pediatric Hematology Pediatrics [23]	September 8-12, full time September 29-May 23, full time	100.00 960.00
St. Christopher's Hospital for Children, 2600 N. Lawrence St., Philadelphia 33, Pa.	Pediatrics for General Practitioners	November 6-March 26, part time	50.00
University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas			
At: St. Joseph's Infirmary (Classroom)	Pediatrics	September 4-December 11, part time	25.00
At: Scott and White Memorial Hospitals [38]	Pediatrics	1st Monday of each month, 4 weeks, full time	Arranged
University of Washington School of Medicine, Seattle 5, Wash.	Pediatrics and Preventive Medicine	July 14-16, full time	80.00
	PHARMACOLOGY		
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Recent Advances in Pharmacology and Therapeutics	September-December, part time	15.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Applied Pharmacology and Therapeutics	Arranged, part time	100.00
Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa.	Inter-Departmental Seminar	September-January, part time	None
	PHYSICAL MEDICINE		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Physical Medicine	October 1-November 19, part time	30.00
Office of the Surgeon General, Educational and Training Division, Washington, D. C. At: Walter Reed Army Hospital, Washington 12, D. C.	Physical Medicine [40,41,42]	October 1-3, full time	None
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Physical Medicine and Rehabilitation	Arranged, 4 weeks, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	7310-A Physical Medicine and Rehabilitation 7311-A Physical Medicine and Rehabilitation 7312-A Seminar on the Rehabilitation of Children	September 22-October 17, January 12-February 6, full time July 14-25, full time October 20-24, full time	100.00 75.00 40.00
At: Institute of Physical Medicine and Rehabilitation	738-A Physical Medicine and Rehabilitation (Graduate Course) 739-A Physical Medicine and Rehabilitation	September 29-June 19, full time Arranged, 12 or 24 weeks, part time	700.00 200.00 for 12 wks.
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Physical Medicine [23] The Hand [30]	September 29-May 23, full time June 16-27, full time	960.00 200.00
	PHYSIOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Surgical Physiology	October 2-June 4, part time	75.00
San Diego County Hospital, North Front and Dickenson Sts., San Diego 3, Calif.	Lectures in Basic and Applied Physiology	Throughout academic year, part time	None
Mercy Hospital, Hillcrest Drive, San Diego, Calif.	Physiology	Annually, 60 hours per year, part time	50.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12, La.	Applied Physiology	Fall, first semester, part time	50.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Normal and Pathological Physiology (Physiology PM 32)	October 22-April 22, part time	100.00

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Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PHYSIOLOGY—Continued		
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Physiology of Respiration	Arranged, 1 month, part time	$75.00
	Physiology of the Nervous System	Arranged, 2 weeks, part time	50.00
	Physiology of the Special Senses	Arranged, 1 month, part time	75.00
	Physiology of the Endocrine System	Arranged, 1 month, part time	75.00
	Physiology and Chemistry of the Gastrointestinal Tract, Digestion	Arranged, 1 month, part time	150.00
	Physiology of the Cardiovascular System and Blood	Arranged, 1 month, part time	75.00
	Applied Physiology	Arranged, 36 hours, part time	300.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	5420-A Normal and Pathological Physiology: Functional and Chemical Aspects	September 22-October 3, full time	100.00
Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa.	Seminar in Physiology	September-June, part time	None
	PLASTIC SURGERY		
Manhattan General Hospital, 307 Second Ave., New York, N. Y.	Laboratory and Clinical Seminars in Plastic and Reconstructive Surgery of Head and Neck [17]	September 2-11, full time	150.00
	POLIOMYELITIS		
Orthopaedic Hospital, 2400 S. Flower St., Los Angeles 7, Calif.	Poliomyelitis	October 20-23, full time	15.00
Georgia Warm Springs Foundation, Warm Springs, Ga.	Care of Acute and Convalescent Poliomyelitis	July, October, January, 5 days, full time	None
D. T. Watson School of Physiatrics, Leetsdale, Pa.[18]	Management of Acute Poliomyelitis with Emphasis on Prescription of the Respirator and Rocking Bed	Arranged, 5 days minimum, full time	10.00
	PROCTOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Proctology	January 8-March 12, part time	50.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Lecture and Cadaver Course in Proctology	October 22, 5 sessions	75.00
Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass. At: Boston Dispensary	Proctology I	October 20-24, full time	40.00[10]
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Jewish Hospital	Proctology	October, 6 weeks, part time	40.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Proctology, Gastroenterology, Operative Proctology (Cadaver)	October, January, 6 weeks, part time	200.00
	Clinical Proctology and Gastroenterology	October, January, 6 weeks, part time	100.00
	Clinical Proctology	Arranged, 6 weeks, part time	75.00
	Clinical and Cadaver Proctology	Arranged, 6 weeks, part time	175.00
	Clinical Gastroenterology	Arranged, 6 weeks, part time	75.00
University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas At: Scott and White Memorial Hospitals	Proctology	Arranged, 2 weeks, full time	Arranged
	PUBLIC HEALTH		
U. S. Public Health Service, Communicable Disease Center, Atlanta, Ga.	General Bacteriology Part 1, Laboratory Diagnosis of Bacterial Diseases	September 2-12, full time	None
	Part 2, General Bacteriology	September 15-26, full time	None
	Enteric Bacteriology	September 29-October 10, full time	None
	Laboratory Diagnosis of Bacterial Diseases	October 27-31, full time	None
	Laboratory Diagnosis of Parasitic Diseases, Part 1, Intestinal Parasites	September 2-26, full time	None
	Part 2, Blood Parasites	September 29-October 17, full time	None
	Laboratory Diagnosis of Tuberculosis	November 3-7, full time	None
	Laboratory Diagnosis of Tuberculosis	November 10-21, full time	None
	Laboratory Diagnosis of Parasitic Diseases	November 10-14, full time	None
	Laboratory Diagnosis of Virus Diseases	November 10-21, full time	None
	Laboratory Methods in Medical Mycology	November 17-21, full time	None
	Laboratory Methods in the Study of Pulmonary Mycoses	November 24-December 12, full time	None
	Laboratory Diagnosis of Virus Diseases	November 24-28, full time	None
	Laboratory Diagnosis of Rabies	December 1-5, full time	None
Johns Hopkins University School of Hygiene and Public Health, 615 N. Wolfe St., Baltimore 5, Md.	Public Health [19]	September-May, full time	800.00
Albany Medical College, Albany, N. Y.[20] At: Albany, Syracuse, Rochester, Buffalo and Poughkeepsie	Extension Course in Public Health	Continuously, part time	25.00
Columbia University School of Public Health, 600 West 168th St., New York 32, N. Y.	Public Health Administration	September 25-May 23, full time	810.00
	Hospital Administration	September 25, 21 months, full time	1,020.00
	Administrative Medicine	September 25, 21 months, full time	1,020.00
University of Pittsburgh, Graduate School of Public Health, Pittsburgh 13, Pa.	Public Health Practice, Occupational Health and Hospital Administration	September-June, full time	700.00
University of Utah College of Medicine, Salt Lake City, Utah	Public Health	September, 2 days, full time	20.00
	RADIOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	Roentgenology	September 30-June 2, full time	100.00
University of Southern California, 1200 N. State St., Los Angeles 33, Calif. At: Los Angeles County Hospital	The Essential Physics of Radiology	September-November, part time	50.00
Office of the Surgeon General, Educational and Training Division, Washington, D. C. At: Walter Reed Army Hospital, Washington 12, D. C.	Radiology [40,41,43]	October 14-16, full time	None

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Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	RADIOLOGY—Continued		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	12 Month Course in Diagnostic Radiology and X-Ray Therapy	By appointment, full time	$750.00
	8 Month Course in Diagnostic Roentgenology	By appointment, full time	500.00
	Routine Clinical Course in Diagnostic Roentgenology and Fluoroscopy	3rd Monday of every month, 2 weeks, full time	70.00
	2 Week Clinical and Didactic Course in Diagnostic Roentgenology and Flouroscopy	1st Monday of each month, full time	125.00
	High and Low Voltage X-Ray Therapy	1st of every week, 1 or more weeks, full time	60.00 for 1 week
	Diagnostic Roentgenology	October 1, 10 sessions	100.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. At: Peter Bent Brigham Hospital	General Radiology 1	Throughout the year, 1 or more months, full time	150.00 per month
At: Massachusetts General Hospital	General Radiology 2	Throughout the year, 1 or more months, full time	150.00 per month
At: Boston City Hospital	General Radiology 3	Throughout the year, 1 or more months, full time	150.00 per month
At: Children's Hospital	Pediatric Radiology	Throughout the year, 1 or more months, full time	150.00 per month
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. At: Receiving Hospital	Medical X-Ray Conference	Quarterly, part time	15.00
University of Minnesota, Center for Continuation Study, Minneapolis, Minn.	Gastro-Intestinal Roentgenology for Radiologists [29]	October 20-25, full time	40.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Columbia Presbyterian Medical Center	Radiological Physics (Radiology PM 1)	January 13-April 17, part time	25.00
At: Mt. Sinai Hospital	Pitfalls in Roentgen Diagnosis of Lesions of the Gastrointestinal Tract (Radiology PM 32)	November 3-14, part time	25.00
	Roentgen Diagnosis of Diseases of the Chest (Radiology PM 31)	October 20-31, part time	25.00
	Introduction to Nuclear Radiation Physics (Radiology PM 30)	October 14-January 27, part time	60.00
At: Hospital for Joint Diseases	Roentgenographic Interpretation of the Diseases of Bones and Joints (Radiology PM 80)	October 1-December 17, part time	150.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Jewish Hospital	X-Ray Diagnosis	October, 10 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Diagnostic Roentgenology	Arranged, 6 weeks, part time	150.00
	Radium and Roentgen Thrapy	Arranged, 6 weeks, part time	150.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Roentgen Interpretation and Technic	October and January, 3 months, full time	300.00
	Advanced Diagnostic Roentgen and Radiotherapy	October and January, 3 months, full time	300.00
	Diagnostic Roentgen and Radiation Therapy	October and January, 12 months, full time	1,000.00
	Practical Course in Superficial and Deep X-Ray Therapy	Arranged, 4 weeks, part time	100.00
	Advanced Course in Radiotherapy	Arranged, 4 weeks, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	651-A Diagnostic Radiology for General	October 1-May 6, October 3-May 6, part time	100.00
	652-A	September 15-December 5, part time	100.00
	653-A Radiology, Basic Sciences	September 29-June 19, full time	700.00
	655-A Radiophysics	October 21-February 3, part time	75.00
American Roentgen Ray Society, Germantown Hospital, Philadelphia 41, Pa. At: Shamrock Hotel, Houston, Texas	Instructional Courses in Radiology	September 23-26 (at annual Meeting)	5.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Radiology [23]	September 29-May 23, full time	960.00
University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas At: Scott and White Memorial Hospitals	Radiology	Arranged, 3 weeks, full time	Arranged
	SURGERY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	General Surgery and Surgical Specialties (Full Time Basic Science Course)	September 29-June 5	Not given
	Traumatic Surgery	September 30-December 10, part time	50.00
	Surgical Diseases of the Peripheral Vascular System	January 6-February 24, part time	30.00
Mercy Hospital, Hillcrest Drive, San Diego, Calif.	Current Developments in Surgery [5]	Annually, 40 hours a year	None
University of California School of Medicine, Medical Extension, San Francisco, Calif. At: Toland Hall, University of California Hospital	Confernce on General Surgery	September 8-12, full time	75.00
Office of the Surgeon General, Educational and Training Division, Washington, D. C. At: Brooke Army Hospital, Ft. Sam Houston, Texas	Tumor Surgery [40,41,42]	October 13-17, full time	None
At: Fitzsimons Army Hospital, Denver, Colo.	Physiological Considerations in General Surgery [40,41,42]	December 1-3, full time	Not given
At: Walter Reed Army Hospital, Washington 12, D. C.	Surgery [40,41,42]	November 17-21, full time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Intensive 2 Weeks Course in Surgical Technic	August 4, 18, September 8, 22, October 6, 20, November 3, December 1, full time	200
	4 Week Course in Surgical Technic, Clinical Surgery, Surgical Anatomy, Pre- and Post-Operative Management	September 8, October 20, full time	300.00
	2 Week Personal Course in General Surgery	October 6, full time	250.00

References will be found on page 698.

Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	SURGERY—Continued		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	1 Week Course in Surgery of Colon and Rectum	September 15, October 13, November 17, full time	$100.00
	2 Week Course in Surgical Anatomy on the Cadaver, Clinical Surgery, Pre- and Post-Operative Management	September 22, November 3, full time	150.00
	1 Week Personal Course in Breast and Thyroid Surgery	October 6, full time	150.00
	10 Hour Personal Course in Gallbladder Surgery	October 20, full time	100.00
	2 Week Intensive Review Course Considering Basic Principles in General Surgery	September 8, full time	200.00
	1 Week Personal Course in Esophageal Surgery	October 13, full time	150.00
	1 Week Personal Course in Thoracic Surgery	October 20, full time	100.00
	10 Hour Course in the Treatment of Varicose Veins	Every Monday, 2 days, full time	40.00
	1 Week Personal Course in General Surgery	October 6, full time	150.00
	10 Hour Course in the Treatment of Varicose Veins	1st and 3rd Wednesday of each month, part time	40.00
	Practical and Didactic Course in Proctoscopy and Sigmoidoscopy	September 9, October 14, November 18 and January 6, 3 sessions	50.00
	Personal Course in Thoracic Surgery	September 24, 10 sessions	100.00
	Personal Course in Surgical Pathology, Gross and Microscopic	October 1, 10 sessions	100.00
	Personal Course in Surgical Diagnosis, Pre- and Post-Operative Management	September 17, 10 sessions	100.00
	Surgical Anatomy on the Cadaver	October 9, 10 sessions	125.00
	Surgical Technic with Practice	September 10, 10 sessions	250.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12, La.	Surgery and Traumatology for General Practitioners	January 12-17, full time	50.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. At: Massachusetts General Hospital	Experimental and Clinical Surgery	Arranged, 1 to 12 months, full time	800.00 [10] for 12 months
University of Michigan, Department of Postgraduate Medicine, Ann Arbor, Mich. At: University Hospital	Clinical Exercises for Practitioners	October 3-December 19, part time	25.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.	Surgical Anatomy [31]	December-June, part time	70.00
	Surgery Seminar	Quarterly, part time	15.00
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Surgery of the Gastrointestinal Tract (Surgery PM 30)	October 13-November 7, full time	150.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: St. John's Episcopal Hospital	Office Surgery	October, 8 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y.	Thoracic Surgery	Fall, 3 weeks, full time	325.00
	Surgical Technique	Arranged, 50 hours, part time	375.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Surgical Anatomy	Arranged, 2 weeks, part time	150.00
	Combined Surgical Course including cadaver Surgery and Gynecology	October and January, 3 months, full time	350.00
	Clinical Surgery	October and January, 6 weeks, full time	100.00
	Clinical and operative (cadaver) Surgery	October and January, 6 weeks, full time	200.00
	Traumatic Surgery including General Surgery, Orthopedic Surgery and Physical Medicine	Arranged, 2 months	200.00
	Surgical Aspects of Peripheral Vascular Disease	Arranged	200.00
	Thoracic Surgery	Arranged	200.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	552-A Diagnosis and Treatment of Peripheral Nerve Injuries	January 12-16, full time	90.00
	551-A The Intervertebral Disc	October 6-10, full time	60.00
	661-A Review of General Surgery (For Specialists)	September 29-October 25, full time	300.00
	663-A Recent Advances in Surgery	September 8-20, full time	200.00
	665-A Surgery	September 29-June 19, full time	700.00
At: Beekman-Downtown Hospital	664-A Trauma (Excluding Fractures) [20]	December 1-6, full time	125.00
	666-A Diagnosis and Treatment of Trauma	December 8-13, full time	90.00
	6610-A Trauma of the Genitourinary System	September 9-October 14, part time	50.00
	6611-A Pitfalls in Internal Fixation of Fractures [20]	November 10-15, full time	90.00
Cleveland Clinic Foundation and Frank E. Bunts Educational Institute, 2020 E. 93d St., Cleveland, Ohio	Surgery of the Abdomen	October 15-16, full time	15.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla.	Postgraduate Course in General Surgery	November 18-19, full time	10.00
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore.	General Surgery	October 20-24, full time	50.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	General Surgery	September 29-May 23, full time	960.00
Temple University School of Medicine, 3400 N. Broad St., Philadelphia 40, Pa.	Laryngology and Laryngeal Surgery	Fall, October 27-November 7, 2 weeks, full time	250.00
University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas			
At: Memorial Hospital, Corpus Christi, Texas	Present Treatment in General Surgery	December 10-February 25, 10 sessions	25.00
At: University of Texas Campus, Austin, Texas	Present Treatment in General Surgery	September 15-November 17, 10 sessions	25.00
At: Robert B. Green Memorial Hospital, San Antonio, Texas	Abdominal Surgery	November, 2 days, part time	15.00
University of Utah College of Medicine, Salt Lake City, Utah	Traumatic Surgery	November, 2½ days, full time	25.00

References will be found on page 698.

Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	THERAPY		
Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital	Recent Advances in Therapy (Medicine PM 44)	October 15-December 3, part time	$60.00
	Principles and practices of Diet Therapy (Medicine PM 40)	October 13-November 17, part time	20.00
	TROPICAL MEDICINE		
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	735-A Topical Medicine	January 5-February 20, full time	300.00
	UROLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif.	General Urology	January 7-March 4, part time	35.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	2 week Intensive Course in Urology	September 8, full time	225.00
American Urological Association, 102-110 Second Ave., S. W., Rochester, Minn. At: Kansas City, Mo.	Postgraduate Course in Urology	December 14-18, full time	50.00
At: Cleveland, Ohio	Postgraduate Course in Urology	December 1-5, full time	50.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y.	Urology	October 1, 8 months, full time	800.00
	Instrumental Urology	Arranged, 4 weeks, part time	75.00
	Operative Surgery (Urological) for Specialists	Arranged, 2 months, part time	150.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.	672-A Urology (Graduate Course)	September 29-June 19, full time	700.00
	674-A Refresher Course in Basic Urology	November 10-15, full time	60.00
	564-A Infertility	December 8-10, full time	40.00
University of Oregon, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore.	Urology	November 3-7, full time	50.00
Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.	Urology [23]	September 29-May 23, full time	960.00
University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas At: M. D. Anderson Hospital	Office Urology	September 9-December 16, part time	25.00
At: Scott and White Memorial Hospitals [38]	Clinical Urology	Arranged, 2 weeks, full time	Arranged
	VENEREAL DISEASES		
U. S. Public Health Service, Hot Springs National Park, Ark.	Venereal Disease Postgraduate Course	September, 5 days, full time	None
Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. At: Social Hygiene Clinic	Conference on Venereal Diseases	Quarterly, part time	15.00
Institute for the Study of Venereal Diseases of the University of Pennsylvania, 34th and Locust Sts., Philadelphia, Pa.	6 Months Essential Basic Training Course	Arranged, full time	Arranged
	4 Week Intensive Review Course	Arranged, full time	Arranged
	3 Week Intensive Review Course	Arranged, full time	Arranged
	10 Day Refresher Course	Arranged, full time	Arranged

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1. Leading to the Degree of Master of Medical Science in Surgery, Medicine, OB and Gyn., Anesthesiology, Otolaryngology, Pediatrics, Radiology and Urology.

2. Course held jointly with San Diego County Hospital.

3. Simultaneous Translation of lectures in Spanish.

4. For Cleveland Area physicians. $10.00 outside Cleveland area. Interns—free.

5. Primarily for Interns and Residents but is open to M.D.'s.

6. Plus $25 for anatomical material used in surgical Anatomy courses.

7. Also sponsored by Yale School of Medicine.

8. Also sponsored by University of Chicago, University of Illinois, Chicago Medical School, Northwestern University and Stritch School of Medicine.

9. For House staff of Hillcrest Hospital. Neighboring Physicians are privileged to attend.

10. Registration fee $5.00.

11. 6 weeks. 3 months $100.00.

12. 6 weeks. 3 months $150.00.

13. 6 weeks. 3 months $250.00.

14. To aid in meeting requirement of specialty boards in Neurological sciences and covers basic studies in diseases of the central nervous system.

15. To prepare for examinations in Surgery and surgical specialties and internal medicine.

16. 1 month $150.00. 9 months $650.00. 2 months $250.00. 12 months $850.00. 6 months $150.00.

17. For Diplomates of American Board of Otolaryngology.

18. Sponsored by University of Pittsburgh.

19. Special training courses in V. D., Mental Hygiene, Maternal and Child Health, Hospital Administration, Medical Care Administration.

20. New York State Health Dept., contributes to course.

21. Course applies particularly to Physicians in the Philadelphia area.

22. Also sponsored by American Cancer Society and State Board of Health.

23. Formal basic science course for Specialty Board Certification.

24. For members. S.W. Society, or AAGP. $15 for non-members.

25. Really 3 one day Symposia with the privilege of registering for all 3 with payment of 1 fee or for any separate one ($17.50 for one day).

26. Stated 2 week period may be followed by additional studies at $100 per week. Course may also be taken by Philadelphia area Physicians on 6 consecutive Thursdays, 36 hours at $150.00.

27. For Non-alumni. Alumni of Graduate School $25.00. Students matriculating in Graduate School on September 29, $15.00.

28. Open only to Physicians who have been formally approved and accepted for training in Psychoanalysis by the Admittance Committee of the Los Angeles Institute of Psychoanalysis.

29. For specialists.

30. Will include: Anatomical, neurological, physiological, dermatological, neurologic surgery and rehabilitation. To present the hand as a medical clinical entity rather than the hand from the point of view of acute injuries or infections.

31. Limited to 20 senior surgical residents.

32. Active participation in operative procedures is not provided in this course.

33. Consists of 3 separate courses and students may be admitted to any one individually.

34. Consists of 4 separate courses and students may be admitted to any one individually.

35. Candidates in training only.

36. Advanced candidates in training only.

37. Medical Society County of Kings and State University of New York College of Medicine.

38. Given by Temple Division of University of Texas, PG School of Medicine.

39. Prerequisite—Course 443-A.

40. Attendance is encouraged from Regular, Reserve or National Guard Medical officers of the Armed Forces on active duty, at Government expense. Attendance will be considered on space available basis and at the individual's own expense in the following priority:

a. Medical officers of the Armed Forces not on active duty;

b. Physicians and surgeons from other Federal agencies;

c. Civilian physicians.

41. Application procedure. Applications should be forwarded so as to reach the addressees listed below not later than six weeks prior to the opening date of the course.

a. Applications from Army Medical officers on active duty and full-time Civil Service physicians on duty at Army installations will be forwarded to the office of the Surgeon General, Department of the Army, Washington 25, D. C., ATTENTION: Personnel Division, Career Guidance Section.

b. Applications from Army Reserve Medical officers not currently on active duty will be forwarded through channels to the Army Area Commander.

c. Applications from National Guard Medical officers should be forwarded through channels to the National Guard Bureau, Washington 25, D. C.

d. Applications from Medical officers from other Branches of the Armed Forces should be forwarded through regularly established channels.

e. All other applications should be forwarded to the Hospital Commander of the installation offering the course.

42. For Board certified and/or board qualified Chiefs or Assistant Chiefs of Services or officers well advanced in the study of this specialty.

43. Officers partially qualified in the specialty or officers responsible for medical treatment in this specialty or the General Practitioner.

44. Course open to pathologists only.

45. Course open to pathologists, gynecologists or surgeons.

46. Sponsored by the M. & R. Laboratories in Columbus, Ohio.

47. Also sponsored by Michigan State Medical Society, Wayne University and Michigan Department of Health.

48. First month, 2nd month, $75; 3rd month, $50, following months, $25.

49. First month, 2nd month, $75; 3rd month, $50.

50. This course available only to physicians certified by American Boards.

51. Including luncheons and refreshments.

52. $125.00 per quarter. $12.00 per week for short periods.

53. Primarily for house staff of Hillcrest Memorial Hospital, but neighboring physicians are privileged to attend.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

COMMITTEE ON MEDICOLEGAL PROBLEMS

The Committee on Medicolegal Problems of the American Medical Association has approved the publication of the following report by Israel Davidsohn, M.D., Philip Levine, M.D., and Alexander S. Wiener, M.D.

MEDICOLEGAL APPLICATION OF BLOOD GROUPING TESTS

During the 15 years (1937-1952) that have elapsed since the Committee on Medicolegal Blood Grouping Tests of the American Medical Association summarized the significance of blood grouping tests in legal medicine, great progress has been made in the understanding of the human blood factors. New blood groups have been discovered and, among these, the rhesus types have proved to be of especial importance. These new groups have been shown to obey the laws of inheritance and have thereby opened new paths in the study of human genetics and have found immediate applications in courts of law in the settlement of cases of disputed paternity. Certain aspects of the subject are still controversial.

In this report the committee has undertaken to deal objectively with those matters in which the opinions of experts are not yet in general agreement and to bring the subject up to date for the benefit of those who have need of such information for medicolegal purposes.

PRESENT STATUS OF THE BLOOD GROUPS

At the time of the previous report, knowledge concerning the human blood group factors was confined almost entirely to the A-B-O system and the M-N system, with only limited knowledge concerning a third system of blood types involving the agglutinogen P. To date, more than eight independent blood group systems have been identified. In this portion of the report we shall summarize the serologic facts concerning these blood factors.

In the case of the A-B-O blood groups, three different nomenclatures were suggested, and similarly there have been several different systems of notations proposed for the Rh-Hr types. Although the problem for the A-B-O groups has been resolved by the universal adoption of a single nomenclature, in the case of the Rh-Hr types there are two methods of designation in use at the present time.

A-B-O Blood Groups.—As shown by Landsteiner, who discovered the blood groups, the blood of every person contains either one, or both, or neither of two agglutinable factors designated by him by the letters A and B. Moreover, human serums contain two corresponding isoagglutinins designated anti-A and anti-B. Only those agglutinins are present in the serum for which the corresponding agglutinogens are lacking from the cells, except during the first few months of life. Thus, the composition of the four blood groups can be summarized as shown in table 1.

The blood group of a person is determined by testing his red cells with anti-A and anti-B serums and his serum or plasma against known cells of groups O, A, and B. Satisfactory high-titered serums are currently prepared by injecting human volunteers with group-incompatible blood or material containing blood group substances. While most experts prepare their own blood group serums, commercial serums that conform with the minimum requirements of the National Institutes of Health may also be used.

Qualitative differences in the agglutinogen A exist. The two main varieties of this agglutinogen are designated A_1 and A_2, respectively, and give rise to two subgroups in group A (A_1 and A_2), and in group AB (A_1B and A_2B), thus increasing the number of blood groups from four to six. Among Caucasoids between one-fifth and one-fourth of persons with agglutinogen A belong to subgroup A_2. Among Negroids the relative incidence of A_2 is somewhat higher, while Mongoloids are characterized by the virtual absence of subgroup A_2.

Still other variants of agglutinogen A exist, designated as A_3, A_4, etc., which are quite rare, and the testing serums used must be potent enough to detect these more weakly reacting variants. Forms intermediate between A_1 and A_2 also exist; these are relatively uncommon among Caucasoids, but more frequent among Negroids.

Group O blood cells are characterized not merely by the absence of agglutinogens A and B but also by the presence of a specific property O, which is also present in the blood cells of subgroup A_2. Naturally occurring anti-O agglutinins in human serums are rare, and are found oftenest in persons of subgroup A_1B. Reagents of anti-O specificity have been prepared from normal ox serums, eel serums, and from anti-Shigella immune goat serums. The low titer and specificity of almost all anti-O reagents have been a cause of confusion. At any rate, due to the difficulty of obtaining suitable reagents, the blood factor O is hardly ever tested for in practical work.

TABLE 1.—*The Four Landsteiner Blood Groups*

Blood Group	Cells (Agglutinogens)	Serum (Isoagglutinins)	Approximate Incidence in New York City, % *	
			Caucasoids	Negroids
O	—	anti-A and anti-B	42.2	51.5
A	A	anti-B	39.2	29.5
B	B	anti-A	13.5	15.5
AB	AB	....	5.1	3.5

* Wiener, A. S.: Heredity of the Rh Blood Types; Observations in a Series of 526 Cases of Disputed Parentage, Am. J. Human Genet. 2: 177, 1950.

TABLE 2.—*The Three M-N Types*

Blood Type	Cell Reactions with Serums		Distribution in New York City, % *	
	Anti-M	Anti-N	Caucasoids	Negroids
M	+	—	29.9	23.0
N	—	+	19.9	25.5
MN	+	+	50.2	51.5

* Wiener, A. S.: Heredity of the Rh Blood Types; Observations in a Series of 526 Cases of Disputed Parentage, Am. J. Human Genet. 2: 177, 1950.

M-N Types.—Serums for demonstrating the agglutinogens M and N are prepared by immunizing rabbits with blood of the appropriate type and then removing species-specific antibodies by absorption. With anti-M and anti-N serums, three blood types can be differentiated, namely, type M (possessing agglutinogen M but not N), type N (possessing agglutinogen N but not M), and type MN (possessing both agglutinogens). Blood lacking both agglutinogens M and N has not been found (table 2). Isoagglutinins for M and N may occur in human serum either naturally or as a result of isoimmunization, but these are very rare; about a score of serums with anti-M have been reported, and only a few with anti-N.

There is a variant of the agglutinogen N, designated as N_2, which is characterized by its weak reactions with anti-N serum. This agglutinogen has been found so far only in type MN (MN_2). The incidence of this variant in Denmark is reported to be about 1 in 10,000, while in New York it has been found to be 1 in 2,000. The anti-N type serum used must be capable of detecting this variant in order to avoid errors when bloods are typed in medicolegal cases. It is also recommended that at least two different serums of each kind, anti-M and anti-N, be used for testing the blood samples. Anti-M and anti-N serums are available commercially from firms licensed by the National Institutes of Health. However, the medicolegal

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Acknowledgment is made of comments and suggestions received from the following consultants: E. L. DeGowin, M.D., J. J. Graydon, M.D. (Australia), R. Rosenfield, M.D., M. S. Sachs, M.D., R. T. Simmons, Ph.D. (Australia), L. H. Snyder, M.D., C. Stormont, Ph.D., L. N. Sussman, M.D., L. J. Unger, M.D., P. Vogel, M.D., I. B. Wexler, M.D., and E. Witebsky, M.D.

expert as a rule prepares his own reagents, because in that way he best acquires the experience needed for precise work.

Several years ago, a blood factor S that is demonstrable with isoimmune human serums and is related to the M-N system was discovered. The relationship of S to M-N was shown by the unequal distribution of the agglutinogen S in the three M-N types as follows: of type M bloods, 73.4% were S-positive; of type MN bloods, 54.1% were S-positive; and of type N bloods, 32.3% were S-positive. In general, about 57.5% of all Caucasoid bloods are agglutinated by anti-S serums. More recently, another blood factor s, reciprocally related to agglutinogen S, has been found, so that nine M-N-S-s types are now known, as follows: M.S, M.Ss, M.s, N.S, N.Ss, N.s, MN.S, MN.Ss, and MN.s. While adequate amounts of potent serums anti-S and anti-s are not yet available, one may hope that they soon will be, thus enhancing considerably the practical usefulness of this system of blood types.

Anti-S and anti-s serums are available only in laboratories doing research on blood grouping. Several examples of anti-S have thus far been found that give sharp reactions with the saline agglutination method. To date, on the other hand, only a single example of anti-s has been found.

TABLE 3.—*Rh-Hr Types*

8 Rh Types				18 Rh-Hr Types				
Reactions with Anti-Rh Serums				Reactions with Anti-Hr Serums			Approximate Distribution in New York City, % *	
Anti-Rh_0	Anti-rh'	Anti-rh''	Designations	Anti-hr'	Anti-hr''	Designations	Caucasoids	Negroids
—	—	—	rh	+	+	rh	13.5	7.5
—	+	—	rh'	+	+	rh'rh	0.9	0.5
				—	+	rh'rh'	0.01	x †
—	—	+	rh''	+	+	rh''rh	0.5	0.5
				+	—	rh''rh''	0.005	x
—	+	+	rh'rh'' (or rh_y)	+	+	rh_yrh	0.01	x
				—	+	rh_yrh'	x	x
				+	—	rh_yrh''	x	x
				—	—	$rh_y rh_y$	x	x
+	—	—	Rh_0	+	+	Rh_0	2.5	42.5
+	+	—	Rh_1	+	+	Rh_1rh	33.5	26.0
				—	+	$Rh_1 rh_1$	20.5	2.0
+	—	+	Rh_2	+	+	Rh_2rh	12.0	13.0
				+	—	$Rh_2 Rh_2$	2.5	2.0
+	+	+	$Rh_1 Rh_2$ ‡ (or Rh_z)	+	+	$Rh_z Rh_0$	13.8	6.0
				—	+	$Rh_z Rh_1$	0.2	x
				+	—	$Rh_z Rh_2$	x	x
				—	—	$Rh_z Rh_z$	x	x

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* These results do not take into account the Rh_0 variants or the rh^w factor.

† The blood types indicated by x are very rare, and have not been observed in tests on random series of persons, when the series included several hundred or even thousands of persons.

‡ Drs. Davidsohn and Levine warn that the use of Rh_z for Rh_1Rh_2 as a phenotype and of R^z as a gene may lead to confusion.

P Agglutinogen.—The blood factor P agglutinogen was discovered with the aid of immune rabbit serums at the same time as M and N. Naturally occurring anti-P agglutinins have also been found in human and animal serums, and most studies have been done with human serums containing such rare anti-P agglutinins. Two major types can be distinguished with the aid of anti-P serums, namely, P-positive (or type P) and P-negative (or type pp). Approximately 75% of Caucasoids are P-positive, while as many as 98% of Negroids are P-positive. In addition, occasionally bloods are encountered that give weak reactions with anti-P serums, indicating the existence of variants of the P agglutinogen. The P agglutinogen has not been applied in medicolegal work because of the difficulty of obtaining satisfactory antiserums.

Rh-Hr Types.—Selected immune animal serums prepared by injecting the blood of monkeys into rabbits or guinea pigs will clump the blood cells of approximately 85% of Caucasoids, due to the presence of a factor designated as Rh. Serums giving parallel or related reactions can be obtained from mothers of erythroblastotic babies, patients who have been sensitized by blood transfusions, or volunteers who are deliberately immunized with blood of an incompatible Rh type. While all anti-rhesus animal serums have given parallel reactions in tests on human blood, anti-Rh serums of human origin differ in their reactions. Moreover, the human serums give stronger and more specific reactions, so that at present all Rh-Hr tests are done with such serums, though the anti-rhesus animal serums remain of considerable theoretical interest.

TABLE 4.—*Nomenclature of the Rh-Hr Types*

Blood Factors	C-D-E Equivalents	Phenotypes and Agglutinogens	C-D-E Equivalents
Rh_0	D	rh	cde
rh'	C	rh'	Cde
rh''	E	rh''	cdE
(Hr_0)	(d)	rh_y (or rh'rh'')	CdE
hr'	c		
hr''	e	Rh_0	cDe
		Rh_1	CDe
Rh variants		Rh_2	cDE
rh^w	C^w	Rh_z (or Rh_1Rh_2)	CDE
$\mathfrak{R}h_0$ *	D^u		
		Rh_1^w	C^wDe
		$\mathfrak{R}h_1$ *	CD^ue
		$\mathfrak{R}h_2$ *	cD^uE
		$\mathfrak{R}h_0$ *	cD^ue

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* Drs. Davidsohn and Levine suggest the symbols Rh_{1u}, Rh_{2u}, and Rh_{0u}, respectively, as alternatives for those given in the table.

The human antiserums are classified into two broad categories, namely, anti-Rh serums and anti-Hr serums. Of the anti-Rh serums, the one corresponding to the animal anti-rhesus serum and giving 85% positive reactions is designated anti-Rh_0; a second serum giving approximately 70% positive reactions is designated anti-rh', while a third serum giving about 30% positive reactions is designated anti-rh''. When tests are carried out with all three of the Rh antiserums, anti-Rh_0, anti-rh', and anti-rh'', eight types of blood can be distinguished (table 3). In tables 4 and 5 a list of equivalents are given whereby this table can be converted into the C-D-E notations. Thus the original Rh-negative type actually includes four types of blood, rh, rh' rh'', and rh'rh'', while the Rh-positive type includes the four types Rh_0, Rh_1, Rh_2 and Rh_1Rh_2. It will be noted that bloods that contain the Rh_0 factor are indicated by R in the symbols for their type, while those lacking the Rh_0 factor are indicated by r. The reason for this differentiation is to emphasize the greater importance of the Rh_0 factor clinically and the special position that it holds serologically.

The situation is further complicated by the existence of reciprocally related Hr factors. Many examples of anti-hr' (anti-c) serum giving reactions reciprocally related to anti-rh' (anti-C) have been found, while only a few examples of anti-hr'' (anti-e) have been encountered, so that fewer studies have been carried out on the hr'' factor. Anti-Hr_0 (anti-d) serum is not available. One or two specimens of this serum have been recorded, but the reports require confirmation. When tests for factors hr' and hr'' are carried out in addition to the tests for the three Rh factors, the number of distinguishable Rh-Hr types is considerably increased. In order to designate the Rh-Hr types, the following convention has been adopted. When tests have been done only for the Rh factors and not the Hr factors, a single symbol is used to indicate the eight possible types as follows: rh, rh', rh'', rh_y, Rh_0, Rh_1, Rh_2, and Rh_z. It will be noted that the shorthand symbol rh_y replaces the symbol rh'rh'', while Rh_z is used in place of Rh_1Rh_2. A second symbol is used to indicate the re-

TABLE 5.—*Anti-Rhesus Serums*

Specificity of the Antiserums		Approximate Incidence of Positive and Negative Reactions Among Caucasoids	
Rh-Hr Nomenclature	C-D-E Equivalents	Positive	Negative
anti-Rh_0	anti-D	85	15
(anti-Hr_0)	(anti-d)	63	37
anti-rh'	anti-C	70	30
anti-hr'	anti-c	80	20
anti-rh''	anti-E	30	70
anti-hr''	anti-e	97	3

sults of the Hr tests as shown in table 3. It is important to emphasize that these are phenotype designations like such terms as group O, blue-eyed, or tall, and are quite independent of any genetic theory.

In tests of bloods with anti-rh' (anti-C) and anti-hr' (anti-c) in general only three combinations of reactions occur, as in the case of the M-N factors. A similar relationship is observed in tests of bloods with anti-rh" (anti-E) and anti-hr" (anti-e) (tables 3 and 11).

Anti-Rh and anti-Hr serums are distributed commercially by firms licensed by the National Institutes of Health, but most experts prefer to prepare their own antiserums. Ample quantities are available of serums of anti-Rh$_0$, anti-rh', and anti-rh", and anti-hr' specificities, while anti-hr" serum can be obtained in limited amounts only.

The subject has been complicated further by the discovery that rare bloods exist that give weak reactions with one or more of the Rh and Hr antiserums, namely, the so-called Rh-Hr variants, or "intermediate" Rh-Hr blood types. The most important variants are those affecting the Rh$_0$ factor. If a person with an Rh$_0$ variant (D^u) is incorrectly typed as Rh-negative, transfusion of his blood into an Rh-negative person may sensitize the recipient, or, if a recipient of such blood is already sensitized, a serious transfusion reaction could result. Recently, special methods have been devised using antiglobulin serum or treating the cells with proteolytic enzymes, by which it is now possible to identify blood containing Rh$_0$ variants with almost as much reliability as blood giving typical reactions. Extensive studies have been carried out on variants of the rh' factor, and for one particular variant of the rh' factor a corresponding antiserum, anti-rh^w (anti-C^w), has been found. Anti-rh^w serum gives strong reactions that permit a sharp division, for example, of persons of type Rh$_1$ into subtypes Rh$_1^w$ and Rh$_1$ proper, and a similar subdivision can be made of persons belonging to type Rh$_z$. Variants have also been encountered of the factors rh", hr', and hr". In general, Rh-Hr variants occur with highest frequency among Negroids. In medicolegal work it is important to be thoroughly familiar with the variants, because incorrect typing of such bloods might result in erroneous conclusions in cases of disputed parentage. Anti-rh^w serum is rare and is used only by investigators specializing in blood grouping, while, as already pointed out, anti-Hr$_0$ is not available.

Secretor Types.—The A-B-O factors are not restricted to the red blood cells but are present also in the cells of tissues and organs, with the exception of nerve tissue, epithelium, skin appendages, bone, and cartilage. The blood group substances present in red blood cells and tissue cells can be extracted with alcohol and other lipid solvents, but only in small amounts. The blood group substances occur also in water-soluble form, and in this respect all persons can be divided into two types, namely, secretors and nonsecretors. In secretors, blood group substances can be extracted with aqueous solutions from tissues and organs, especially salivary glands and gastric mucosa, and blood group substances are present in high concentration in secretions such as saliva, gastric juice, and semen. In nonsecretors water-soluble group substances are not demonstrable in the body fluids or secretions. About 75 to 80% of Caucasoids are secretors.

The fact that the blood group substances can be demonstrated in secretions such as saliva and semen is of considerable medicolegal importance. This makes possible the grouping of dried stains of saliva, for example, on cigaret stubs or postage stamps, and of seminal stains in rape cases. Because of the relatively high concentration of the blood group substances in such materials, the results are usually clear cut. The principle of the tests is to determine the capacity of saline extracts to inhibit specifically the reactions of anti-A and anti-B serums. This method has also been applied successfully to blood grouping of corpses when there was no blood to carry out direct agglutination tests, for example, by preparing saline extracts of muscle tissue. Errors can be avoided only by including suitable controls.

Tests on tissues and secretions are restricted to the A-B-O groups, because to date it has not been possible to demonstrate conclusively the presence in them of other agglutinogens, with the exception of the so-called Lewis factors.

Lewis System.—It has been known for a long time that occasionally human serums contain naturally weak isoagglutinins that give reactions unrelated to the A-B-O system. Most of these irregular isoagglutinins are of anti-P specificity, rare examples have been encountered of anti-M specificity, while most of the remainder remained unclassified. In view of the poor reactions given by these weak irregular agglutinins, which give the strongest clumping at low temperatures under conditions in which nonspecific cold agglutinins interfere, there was little interest in the natural irregular isoagglutinins until recently, when the Lewis factors were encountered. Two related Lewis factors have been found that are designated Le^a and Le^b, respectively. Factor Le^a has been studied much more extensively, and the striking fact has been established that adults who are Le^a-positive are almost invariably nonsecretors of the A-B-O group substances, while Le^a-negative persons are secretors. Many aspects of the Lewis blood factors, especially the relationship between Le^a and Le^b, are still unclear, because of the difficulty of obtaining potent and specific reagents. Therefore this committee does not consider the Lewis system sufficiently well-established to be applied in medicolegal cases.

Kell-Cellano Types (K-k).—Antibodies for a blood property present in approximately 10% of Caucasoids have been found in occasional serums from mothers of erythroblastotic babies, as well as in serums from persons who have had hemolytic transfusion reactions. The symbol K has been selected for this factor after the patient, Kell, in whose serum the antibody was first detected. More recently an antibody was encountered in the serum of the mother of an erythroblastotic baby that gives reactions reciprocally related to the Kell factor. The new blood property, designated as the Cellano factor, after the patient, has an incidence of 99.8% among Caucasoids, and has been assigned the symbol k to indicate its reciprocal relationship to the Kell factor. When tests are done with both anti-K and anti-k serums, three types can be differentiated as follows: type KK in 0.2%; type Kk in 8.6%; and type kk in 91.2%. Experience with this blood group system is limited, due to the short period since its discovery as well as the difficulty of obtaining serums giving satisfactory reactions.

Many examples of anti-K serum have been found, but most of them are usable only with the conglutination [1] and antiglobulin methods. Only a single example of anti-k has been found so far; this particular serum is of high titer and gives good reactions by the saline agglutination technique. It is evident therefore that up to now the K-k system has necessarily been studied largely by workers specializing in blood grouping, though limited quantities of anti-K serum are commercially available. This committee therefore does not consider the K-k system sufficiently well established for medicolegal application at present, but it will probably become available in the near future.

Other Blood Group Systems.—Several additional independent blood group systems have been encountered, but they are of relatively little clinical importance because of the rarity with which they give rise to isosensitization. While from the medicolegal standpoint they are of limited value because of the difficulty of obtaining antiserums, a brief statement regarding them is necessary for the sake of completeness.

There appear to be a number of blood factors that are demonstrable only by the antiglobulin techniques. Of these, the most important is the so-called Duffy or Fy^a factor. This blood property is important, because it has proved to be responsible for a number of serious intragroup hemolytic transfusion reactions. In the opinion of this committee, the blood properties demonstrable only with antiglobulin serum have no place at present in medicolegal work, because even with high titered antiserums it is often difficult to obtain clear cut reactions.

BLOOD GROUPING TESTS FOR EXCLUSION OF PARENTAGE

During the past decade, as a result of the introduction of the Rh-Hr tests, the usefulness of blood tests in medicolegal cases has been enhanced considerably. The chief application of the blood tests has been in cases of disputed paternity involving babies born out of wedlock, but the tests are also frequently applied in divorce actions, and occasionally in cases of disputed maternity, as well as in instances of suspected interchange of infants in hospitals. When a man is falsely accused of paternity, he has better than a 50% chance of being exonerated by the combined use of the A-B-O, M-N, and Rh-Hr tests, while more than 90% of cases of interchange of infants can be solved by such tests.

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[1] The term conglutination in relation to anti-K serum refers to clumping occurring only in the presence of plasma but not in saline medium.

TABLE 6.—*Multiple Allele Theory of Inheritance of Blood Groups*

Blood Group (Phenotype)	Corresponding Genotype
O	**OO** *
A	**AA, AO**
B	**BB, BO**
AB	**AB**

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* The boldface type in the tables corresponds to the italics in the text.

TABLE 7.—*Blood Groups in Parents and Children With Ten Possible Matings*

Blood Groups of Parents	Possible Blood Groups in Children	Blood Groups Not Possible in Children
1. O × O	O	A, B, AB
2. O × A	O, A	B, AB
3. A × A	O, A	B, AB
4. O × B	O, B	A, AB
5. B × B	O, B	A, AB
6. A × B	O, A, B, AB	None
7. O × AB	A, B	O, AB
8. A × AB	A, B, AB	O
9. B × AB	A, B, AB	O
10. AB × AB	A, B, AB	O

Application of the A-B-O Groups.—Recent studies have served to substantiate further the theory of the inheritance of the four blood groups by the triple allelic genes *A*, *B*, and *O*. Since every person has a pair of genes for every inherited characteristic, one gene of each pair being derived from the father and the other from the mother, there are six possible genotypes corresponding to the four blood groups (or phenotypes), (table 6).

The theory of multiple alleles leads to the following laws: 1. The agglutinogens A and B cannot appear in the blood of a person unless they are present in the blood of one or both of his parents. 2. A parent with blood of group AB cannot have a child with blood of group O, and a parent of group O cannot have a child of group AB. Ten different kinds of mating are possible, and, based on the laws just stated, the blood groups that can occur among the children of each of these matings are shown in table 7.

TABLE 8.—*M-N Blood Types*

Phenotype	Genotype
M	**MM** *
N	**NN**
MN	**MN**

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* The boldface type in the tables corresponds to the italics in the text.

TABLE 9.—*Heredity of the Agglutinogens M and N with Six Possible Matings*

Blood Groups of Parents	Possible Blood Groups in Children	Blood Groups Not Possible in Children
1. M × M	M	N, MN
2. N × N	N	M, MN
3. M × N	MN	M, N
4. MN × M	M, MN	N
5. MN × N	N, MN	M
6. MN × MN	M, N, MN	None

Studies on families with a total of more than 25,000 children have failed to disclose any contradictions to this theory that could not be explained either on the basis of an error in blood grouping or illegitimacy. Theoretically, mutations could give rise to exceptions to the theory once in about 50,000 to 100,000 cases. However, this rare possibility does not interfere with the medicolegal application of the tests, because when blood grouping tests are accurately performed there is hardly any other evidence that can approach in reliability the conclusions based on such blood tests.

Theoretically, the subgroups of A could also be applied in problems of disputed parentage. In practice, however, difficulties in technique, especially in subgrouping blood of newborn infants, interfere with the tests, so that this committee does not consider tests for the subgroups reliable enough for use in medicolegal cases.

Application of the M-N Types.—According to the generally accepted theory, the M-N types are inherited by a pair of allelic genes *M* and *N*. Thus there are three genotypes corresponding to the three M-N types (table 8). The theory leads to the following two laws: 1. Agglutinogens M and N cannot appear in the blood of a person unless they are present in the blood of one or both his parents. 2. A parent with blood of type M cannot have a child with blood of type N, and a parent with type N blood cannot have a child with type M blood. Six different types of mating are possible, and the M-N types that can occur among the children in each of these matings is shown in table 9 (see also table 11).

TABLE 10.—*Inheritance of the Rh-Hr Blood Types*

Phenotypes		
8 Rh-Hr Types *	18 Rh-Hr Types	Possible Genotypes †
rh	rh	**rr** ‡
rh'	rh'rh	**r'r**
	rh'rh'	**r'r'**
rh"	rh"rh	**r"r**
	rh"rh"	**r"r"**
rh_y	rh_yrh	**r'r"** and r^yr
	rh_yrh'	r^yr'
	rh_yrh''	r^yr''
	rh_yrh_y	r^yr^y
Rho	Rho	R^0R^0 and R^0r
Rh_1	Rh_1rh	R^1r, R^1R^0, and R^0r'
	Rh_1Rh_1	R^1R^1 and R^1r'
Rh_2	Rh_2rh	R^2r, R^2R^0, and R^0r''
	Rh_2Rh_2	R^2R^2 and R^2r''
Rh_z	Rh_zRho	R^1R^2, R^1r'', R^2r', R^zr, R^zR^0, and R^0r^y
	Rh_zRh_1	R^zR^1, R^zr', and R^1r^y
	Rh_zRh_2	R^zR^2, R^zr'' and R^2r^y
	Rh_zRh_z	R^zR^z and R^zr^y

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* See footnote ‡ on table 3.

† **r** = **cde**; **r'** = **Cde**; **r"** = **cdE**; r^y = **CdE**; R^0 = **cDe**; R^1 = **CDe**; R^2 = **cDE**; R^z = **CDE**.

‡ The boldface type in the tables corresponds to the italics in the text.

The fact that in tests on hundreds of thousands of persons not a single person has been encountered with blood lacking both the agglutinogens M and N is strong evidence in support of the theory. Moreover, in studies on families with a total of more than 10,000 children not a single contradiction has been encountered that could not be explained on the basis of illegitimacy. Especially noteworthy is the experience in medicolegal cases in Denmark, where in more than 20,000 mother-child combinations not a single type M mother with a type N child nor a type N mother with a type M child was encountered. In view of these observations this committee considers that the M-N tests are as reliable as the A-B-O tests, when carried out by qualified experts.

When the related S-s blood factors are taken into account, the situation becomes more complicated. Instead of a pair of allelic genes, one must postulate either a series of four allelic genes or closely linked gene pairs, such as *MS*, *Ms*, *NS*, and *Ns*. This results in 10 genotypes corresponding to the 9 possible phenotypes. In view of the scarcity of potent and specific serums, and the small number of studies that have been carried out to date, this committee feels that the S-s blood factors should not yet be applied routinely in medicolegal cases.

Application of the Rh-Hr Types.—One group of workers maintains that the Rh-Hr types are inherited by a series of multiple allelic genes, while other workers favor the concept of linked gene triplets. Fortunately, this disagreement does not interfere with the medicolegal application of the Rh-Hr tests in cases of disputed parentage. At any rate, the mechanism of heredity is the same in principle as for the A-B-O groups and M-N types, except that the situation is complicated by the greater variety of blood factors and genes. For practical purposes it is sufficient to take into account only the eight alleles (or chromosomes), r, r', r'', r^y, R^0, R^1, R^2, and R^z. These eight alleles and their equivalents in terms of C-D-E give rise to 36 genotypes that correspond to the 18 possible phenotypes shown in table 10. Theoretically, as many as 171 types of mating are possible, many of which have not yet been encountered because of the rarity of certain of the blood types. Due to the limitations of space, a table listing these matings cannot be reproduced here, but interested readers can find such tables giving the types among the children of 171 matings in the World Health Organization Bulletin [2] as well as in the recent book of Race and Sanger.[3]

For practical purposes the consequences of the genetic theory can be summarized in the following laws: 1. Blood properties Rh_0, rh', rh'', hr' and hr'' cannot appear in the blood of a person unless they are present in the blood of one or both his parents. 2. A parent who is rh'-negative (*cc*) cannot have an hr'-negative (*CC*) child; nor can an hr'-negative (*CC*) parent have an rh'-negative (*cc*) child. 3. A parent who is rh''-negative (*ee*) cannot have an hr''-negative (*EE*) child; nor can an hr''-negative (*EE*) parent have an rh''-negative (*ee*) child. (These laws can be expressed in terms of the C-D-E notations with the aid of tables 4 and 11.)

Recently a unique blood has been encountered that reacts only with anti-Rh_0 (anti-D) serum, but not with any of the other Rh-Hr serums. The existence of this remarkable blood suggests the possibility in certain combinations of exceptions to laws 2 and 3 in the preceding paragraph. However, to assume that a specific exclusion of paternity based on these laws is actually such an exception would be farfetched, because such unusual bloods, which must be extremely rare, can be detected by the expert.

Due to the complexity of the Rh-Hr tests and their more recent discovery, studies on the inheritance of these types have not been as extensive as in the case of the A-B-O groups or M-N types. To date studies have been carried out on families with a total of more than 5,000 children without a single exception to the genetic theory being encountered that could not be explained on the basis of illegitimacy. Moreover, in tests of several thousand mother-child combinations, not a single exception to the second law of the inheritance of the Rh-Hr types has been encountered. It should be pointed out that until recently most studies on the heredity of the Rh-Hr types have included only blood factors Rh_0, rh', rh'', and hr', and only a few studies have included also factors hr'' and rh^w, because serums of anti-hr'' and anti-rh^w specificities are rarer and therefore more difficult to obtain.

In the opinion of this committee the Rh-Hr tests constitute a reliable addition to the other blood tests in cases of disputed parentage, provided, of course, that the person who carries out the tests is an expert who has had extensive experience with the performance of such tests. A complete test should include tests for the blood factors Rh_0, rh', rh'', and hr' and not merely for Rh_0 alone. Moreover, workers with special experience and who have the necessary antiserums may in selected cases include tests also for factors hr'' and rh^w.

Application of Other Blood Factors.—Under special circumstances, when suitable reagents are available, the expert may occasionally make use of some of the other blood group systems in problems of disputed parentage. Recently, for example, a case was encountered in which the putative father was not excluded by the "standard" A-B-O, M-N, or Rh-Hr tests, but nevertheless was proved to be innocent of the charge because the child's blood contained the rh^w factor lacking from the blood of the putative father and mother. Tests for blood properties such as P, Fy^a, and Le not infrequently result in weak or indefinite reactions even under ideal conditions, and therefore this committee believes that these newer blood properties should not be applied in medicolegal cases for the present. Eventually, however, when reliable serums become generally available and adequate family studies have been performed, it will no doubt become possible to include tests for some of these newer blood factors in medicolegal work. As already mentioned, about 50% of falsely accused men can be exonerated by the A-B-O, M-N, and Rh-Hr tests at present, and when other blood factors such as S-s, K-k, and Fy^a become usable, the chances of exclusion will be increased to more than 60%.

BLOOD TESTS IN COURTS

Blood tests have now become a recognized and standard procedure in cases of disputed parentage in the American courts. A number of states have passed laws that give the court the power to order blood tests in any case in which the problem of paternity or maternity is relevant to the case. Such laws have been passed in New York, Wisconsin, Ohio, New Jersey, Maryland, South Dakota, North Carolina, Maine, and Pennsylvania. In states where statutes have not been passed there is nothing to prevent the performance of the tests by mutual consent of the parties involved, and, once significant results have been obtained, they are always admissible in evidence. Since the tests can be used only to exclude paternity and cannot be used to prove paternity, to avoid misunderstanding the tests should be admissible as evidence only when they exclude paternity.

TABLE 11.—*Blood Factors rh' (C) and hr' (c) in Parents and Children**

	Percentage of Children with Each Phenotype		
Mating	rh' CC	rh'hr' Cc	hr' cc
CC × CC	100	0	0
cc × cc	0	0	100
CC × cc	0	100	0
CC × Cc	50	50	0
cc × Cc	0	50	50
Cc × Cc	25	50	25

* This table is analogous to that used for the three M-N types (table 2), M being replaced by C (rh') and N by c (hr'). Similarly, the table can be used to show the hereditary transmission of other contrasting blood factors, namely, E-e (rh''-hr''), S-s, and K-k.

By now there must have been several thousand cases in which blood tests have been carried out in cases of disputed parentage in courts of this country. A summary of the statistics for this country up to 1943 can be found in the book by Sidney B. Schatkin.[4] In the court of Special Sessions of New York City the tests have become routine in paternity cases involving children born out of wedlock whenever the defendant denies paternity. When the tests exclude paternity, they are repeated independently by another expert, and, when, as has invariably been the case, the findings are confirmed, the practice of that court has been to acquit the defendant of the charge. If the complainant refuses to submit to the blood tests ordered by the court, the case is dismissed without prejudice and can be reopened at any time that the woman is willing to submit to the blood tests. Thus, the introduction of blood tests has caused courts to change fundamentally their attitude towards paternity proceedings.

While the results of the blood tests are admissible when they exclude paternity, the findings are not binding on the court. That is as it should be. It is the duty of the court to examine the evidence in order to convince itself that the tests have been properly carried out by qualified experts. When the court feels that adequate safeguards have not surrounded the tests, it should order the tests to be repeated by an independent expert, and there is nothing to prevent shipping of the blood to another part of the country if there is no other qualified expert in the state in which the case is being tried. In divorce and separation actions the court often takes into account other considerations, aside from the scientific results of the blood tests. To base decisions entirely on the results of the blood tests in such cases may harm an innocent third party by bastardizing the child. For this reason in a number of cases the court has refused to grant a divorce on the basis of the blood tests alone. In uncontested divorce actions, however, when the blood tests exclude paternity, the court has no choice but to grant the decree.

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[2] Wiener, A. S.: Heredity and Nomenclature of the Rh-Hr Blood Types, Bull. World Health Organ. *3:265, 1950.*

[3] Race, R. R., and Sanger, R.: Blood Groups in Man, Springfield, Ill., Charles C Thomas, Publisher, 1950.

[4] Schatkin, S. B.: Disputed Paternity Proceedings, ed. 2, New York City, Matthew Bender and Company, 1947.

In other English speaking countries, namely, England, Canada, and Australia, blood tests have been applied only to a very limited extent. In European countries the blood tests have been applied more extensively in Germany, Denmark, and Sweden, where the blood tests are used routinely in all paternity procedures, the tests being carried out in government-supported laboratories. In Denmark, for example, the A-B-O and M-N tests have been applied in more than 20,000 cases up to the present time.

For more than five years the Rh-Hr tests have been applied routinely in this country along with the A-B-O and M-N tests in cases of disputed parentage. By now, in fact, the Rh-Hr tests must have been used in approximately 2,000 cases. As is to be expected, the first few cases in which an exclusion was based solely on the results of the Rh-Hr tests, when the A-B-O and M-N tests were inconclusive, were contested. The first decision based solely on the results of Rh-Hr tests is that of Justice Jacob Pankin[5] who granted a divorce in a case in which the putative father belonged to type AB MN rh, the mother to type A M Rh_1Rh_1 and the child to type A M Rh_1Rh_1. Since that time the results of the Rh-Hr tests have been accepted routinely by the Court of Special Sessions in New York City whenever they excluded paternity, and are considered to have equal weight with the results of the A-B-O and M-N tests. To date the Rh-Hr tests have been applied in relatively few medicolegal cases outside of the United States.

QUALIFICATIONS OF EXPERTS

It hardly seems necessary to point out that it is essential that the person who undertakes to perform blood tests in medicolegal cases be a specialist in the field, that is, he should preferably be a person with an M.D. degree or with comparable academic training such as the possession of a Ph.D. degree, who has acquired extensive experience in the entire field of study of individual blood differences. In this connection, there is need for formation of a special panel of persons qualified to perform blood grouping tests in medicolegal cases of disputed parentage. In the meantime it is possible to distinguish most of the experts by the quality of their publications on the subject. The expert will have available at all times a large panel of persons of representative blood groups and types from whom he can obtain blood samples to serve as positive and negative controls for the various antibodies employed. The results of the control tests should be included in the final report. It is reprehensible to accept a case of disputed paternity and then purchase the necessary testing serums in order to obtain one's first experience with the delicate M-N and Rh-Hr tests with a problem of this nature. These tests have numerous pitfalls, and accurate results can be obtained only by specialists with regular and continuous experience with these tests. Moreover, the qualified expert must not only be a capable immunologist but also be well versed in genetics.

The policy followed in New York City appears to be sound, and is also the least objectionable, since it does not interfere with the principle of free choice of physicians. After consultation with the New York Academy of Medicine, the Court of Special Sessions drew up a list of qualified experts available in the metropolitan area. When any party to an action requests the blood tests, his attorney is permitted to select any physician whose name is included on the list of experts. In addition to this precaution, whenever the blood tests exclude paternity, independent blood tests are carried out by another expert on the list.

Blood grouping evidence is unique in that when properly performed it is completely objective and, moreover, the evidence cannot be destroyed as long as the parties concerned are alive. A person's A-B-O group, M-N type, and Rh-Hr type never change throughout his lifetime, and the tests can be repeated at any time merely by drawing a fresh sample of blood. In fact, with the efficient air transport service now available, when it is desirable, blood can be shipped half way around the world to be tested by an expert thousands of miles away.

EXAMINATION OF BLOOD AND SECRETION STAINS

Occasions when it is desirable to examine dried blood stains in medicolegal cases are less common than cases of disputed parentage. Such problems arise most frequently in murder cases, for example, when a suspect is found with blood stains on his clothing for which he cannot satisfactorily account. In such cases the blood tests are of value only for purposes of exclusion; thus an alibi that the blood stains contain the suspect's own blood can be refuted if it can be shown that the stains belong to a different blood group. If the blood stain is of the same blood group, on the other hand, this would not necessarily indicate that the alibi is true.

In the rare cases in which the stains are still wet and fresh when found, blood suspensions can be prepared and classified in the usual way for the A-B-O, M-N, and Rh-Hr types. As a rule, however, the blood stains are dried when found, in which case special methods of testing must be applied. It is first necessary to establish whether the stains actually contain human blood by suitable chemical and precipitin tests. Blood grouping tests on dried blood when successful are limited to the four A-B-O groups. In addition, blood stains in medicolegal cases are frequently on soiled garments and are often contaminated by bacteria or sweat and other body secretions. Putrefied or decomposed blood does not yield reliable results, and even with well-preserved stains, the material is often insufficient in amount. The qualified investigator, however, will refrain from making any report at all unless the reactions he obtains are absolutely clear and decisive. For the examination of blood stains, particularly, it is essential to have well-trained workers, since those not thoroughly familiar with the field seem to have a tendency to offer an opinion in every case even though the results may not warrant this. With regard to other stains such as semen and saliva, the same general principles apply.

The problem has been solved in New York City by the creation of the laboratory of bacteriology and serology in the office of the chief medical examiner. The department is run by specially trained persons who are selected by Civil Service examinations. These persons are responsible for investigating the bacteriologic and serologic aspects of all sudden and unexplained violent deaths. In such cases the blood of the deceased is routinely tested at the postmortem examination for its blood group, M-N type, and Rh type, and that information is filed away for subsequent use in the event that at a later date a blood stain has to be tested for comparison with the blood of the deceased. When any stains of blood or secretions are found that may have any bearing on the problem, they are brought to the laboratory by a detective for examination. As a result of the routine processing of such stains and blood obtained postmortem, it has been possible to solve a number of puzzling murder cases, as well as hit-and-run automobile cases.

A similar laboratory has been set up by the Federal Bureau of Investigation, U. S. Department of Justice, Washington 25, D. C., for the examination of blood stains and secretions in criminal cases. This committee recommends that similar laboratories be set up in other states and large cities where there are qualified persons available to carry out the examinations. If qualified experts and facilities are not available locally, contact should be made with the Federal Bureau of Investigation's laboratory for aid in solving such problems. Certainly difficult problems of this nature should not be entrusted to police sergeants or other persons who have limited or no background of training in this difficult field.

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[5] Saks vs. Saks, New York Law Journal 118: 147, 1947.

RECOMMENDATIONS

This committee recommends that this report be distributed to proper medical and legal authorities in order to familiarize them with the facts available concerning the medicolegal application of blood grouping tests. In this way it is hoped that this knowledge will become more generally available and the maximum use be made of the tests in courts of law, in order to substitute scientific facts for opinion. Moreover, the committee recommends that the blood group test bills be introduced into the legislatures of those states that still do not have laws enabling courts to order blood grouping tests in cases where the results of such tests are pertinent to the issue.

ADDENDA

Prepared by the Bureau of Legal Medicine and Legislation, April, 1952.

STATUTES

In the following states, when paternity is an issue, testimony concerning the results of blood grouping tests is made admissible in evidence by statute when the results of such tests disprove paternity.

Maine.—Laws 1939, c. 259 (adding sec. 12 to Rev. Stat. (1930) c. 111).

Maryland.—Laws 1941, c. 307 (adding sec. 17 to Anno. Code, 1939 ed., art. 12).

New Jersey.—Laws 1939, c. 221 (adding secs. 3 & 4 to Rev. Stat. 1937, title 2, subtitle 11, c. 99).

New York.—Civil Prac. Act, sec. 306-a, as amended by *Laws 1942;* c. 893; Code of Crim. Proc., sec. 684-a; Dom. Rela. Laws, Sec. 126-a; N. Y. City Crim. Cts. Act, sec. 67-1-a; *Laws 1942,* c. 761, sec. 1, (adding sec. 34 to *Laws 1933,* c. 482, which established the domestic relations court of the City of New York).

North Carolina.—Laws 1945, c. 40.

Ohio.—Page's General Code, Anno. (1942 Supp.) secs. 12122-1, 12122-2.

Pennsylvania.—Acts 1951, Act No. 92.

South Dakota.—Code 1939, sec. 36.0602.

Wisconsin.—Stat. 1941, secs. 166.105 and 325.23.

COURT DECISIONS

California.—Arais v. Kalensnikoff (Calif.), 67 P. (2d) 1059; J. A. M. A. **110:** *466 (Feb. 5) 1938; 74 P. (2d) 1043; J. A. M. A.* **111:** *566 (Aug. 6) 1938.*—Pointing out that medical profession accepts the results of Landsteiner test as conclusive where it shows nonpaternity, the District Court of Appeals, California, in an appeal from bastardy proceedings where parties voluntarily submitted to blood grouping tests, held the tests to be such a matter of science and common knowledge as to warrant taking judicial notice of the conclusiveness of the tests where nonpaternity is demonstrated.

On the final appeal, the Supreme Court of California said that the results of blood grouping tests are expert opinion and held that when there is conflict between scientific and other testimony as to facts the trial court or jury must determine the relative weight of the evidence. (The judgment of the trial court, holding that the defendant was the father of the child, was affirmed.)

Berry v. Chaplin, 169 P. (2d) 442 (Calif. 1946); J. A. M. A. **132:** *498 (Feb. 15) 1947.*—The Supreme Court of California held that in case of disputed paternity the results of blood grouping tests, voluntarily made, are not conclusive evidence, and if the results of this scientific evidence conflict with other evidence the trial court or jury must determine the relative weight of each.

Federal (D. C.).—Beach v. Beach, 114 Fed. (2d) 479 (1940); J. A. M. A. **116:** *2337 (May 17) 1941.*—In divorce action, where questions of adultery and paternity of child were at issue, a request for blood grouping test was held properly granted by the U. S. District Court for the District of Columbia because the test is procedural and does not affect any substantive right. Court held further that the child was a party to the action and the results of the tests were as much to its benefit as to the mother's and putative father's.

Maine.—Jordan v. Davis, 57 A. (2d) 209 (Maine, 1948); J. A. M. A. **137:** *488 (May 29) 1948.* In the face of unrefuted evidence, in a bastardy proceeding that plaintiff and defendant had intercourse on a certain date, that a child was born within the normal period of gestation thereafter, and, in the absence of any evidence that anyone else could be the father of the child, it was held by the Supreme Judicial Court of Maine that blood grouping tests are not conclusive but rather that the trial court or jury has the right to hear and weigh all the evidence and to reject any evidence the accuracy of which it doubts.

Jordan v. Mace, 69 A. (2d) 670 (Maine 1949); J. A. M. A. **142:** *750, (Mar. 11) 1950.*—Appeal from order denying new trial after jury had found defendant to be father of twins born to plaintiff. Eleven tests of the blood of the plaintiff, twins and defendant, excluded the defendant as the father. The Supreme Court said that biologic law goes beyond the opinion of an expert and that the jury may not give such weight as it may desire to such biologic law. The jury's duty is to determine whether conditions exist which made the biologic law applicable and whether the tests were properly made. Therefore the order denying a new trial was reversed.

New Jersey.—Bednarik v. Bednarik, 16 A. (2d) 80 (N. J., 1940); J. A. M. A. **119:** *102 (May 2) 1942.*—In an action for divorce, where adultery and paternity of child were issues, it was held by the Court of Chancery of New Jersey that a general statute authorizing blood grouping tests where paternity is an issue did not repeal a statute prohibiting husbands and wives giving evidence for the other in actions for divorce on ground of adultery. For this reason it was held that testimony concerning the results of such tests was not admissible in this type of action. The court added that to compel a person to submit against her will to a blood grouping test is a serious assault and battery.

Anthony v. Anthony, 74 A. (2d) 919 (N. J., 1950); J. A. M. A. **144:** *1117, (Nov. 25) 1950.*—In a divorce case there was a motion by defendant to require plaintiff, child and defendant to submit to blood grouping tests. The supreme court, chancery division, held that the accuracy and worth of such tests have been abundantly shown. The circumstances being clearly within the purview of the statutory authority, the court granted the requested motion.

Cortese v. Cortese, 76 A. (2d) 717 (N. J., 1950) J. A. M. A. **145:** *755 (Mar. 10) 1951.*—Appeal following refusal of trial court to grant defendant's motion to require blood tests. The superior court, appellate division, held that reliability of tests had been established and that statute permitted their use. Trial court ruling was reversed.

New York.—Taylor v. Diamond, 269 N.Y.S. 799 (N. Y., 1934).—Here it was held, in a bastardy proceeding, that the Court of Special Sessions, New York, may not in the absence of statutory authority, compel parties to the action to submit to blood grouping tests.

Beuschel v. Manowitz (N.Y.), 271 N.Y.S. 277; 272 N.Y.S. 165; J. A. M. A. **104:** *344 (Jan. 26) 1935.*—Where defendant was sued for damages for carnal assault and subsequent birth of child, his request for blood grouping test was held to be relevant to the issues and the results of the test were held by The Supreme Court of Kings County, New York, to be trustworthy and testimony thereof to be admissible in evidence.

However, the appellate division of Supreme Court ordered reversal on the grounds that the tests do not establish paternity but rather the probability of nonpaternity; that the child is not a party to the action; and that the child's welfare is not involved to the extent that chancery jurisdiction of court may be invoked.

Harding v. Harding, 22 N.Y.S. (2d) 810 (N.Y., 1940); J. A. M. A. **116:** *2337 (May 17) 1941.*—In an action for divorce, where adultery and paternity of child were issues, testimony concerning the results of blood grouping tests made pursuant to statute, was held by the Domestic Relations Court of the City of New York, Family Court Division, Queens County, New York, to be of no more credibility than any other evidence because the tests are highly complex and susceptible to errors.

Schulze v. Schulze, 35 N.Y.S. (2d) 218 (N.Y., 1942); J. A. M. A. **120:** *1160 (Dec. 5) 1942.*—In action for divorce, where adultery and paternity were issues, where physician testified that result of blood grouping tests made pursuant to statute excluded husband as father of child, it was held by the Supreme Court of Monroe County, New York, that to deny a decree of divorce to husband would be tantamount to holding the testimony of physician not worthy of belief or that the procedure for blood grouping tests as authorized by statute is futile in so far as having any probative value is concerned.

Saks v. Saks, 71 N.Y.S. (2d) 797 (N.Y., 1947); J. A. M. A. **136:** *203 (Jan. 17) 1948.*—In a case of disputed paternity where parties voluntarily submitted to blood grouping tests and where statute permits testimony on blood tests to be admitted in evidence and to be given the same consideration as any other type of testimony it was held by the Domestic Relations Court of the City of New York, Family Court Division, King's County, New York, that if such testimony is believable the court cannot reject it. [Note: The court, in this case, gave recognition to the dependability of the Rh factor in human blood in the determination of paternity.]

Commissioner of Welfare ex rel. Tyler v. Costonie, 97 N.Y.S. (2d) 804 (N.Y., 1950) J. A. M. A. **144:** *573 (Oct. 14) 1950.*—Appeal from order entered finding defendant to be father of child in question. The blood tests definitely excluded him. The supreme court, appellate division, first department, held that a blood test exclusion report is something more than a mere opinion and should be recognized and given effect. Here there were some doubts as to the making of the test itself, however. The court therefore reversed the judgment in favor of the mother but granted a new trial on the question of the accuracy of the procedure used in making the test.

Scalone v. Scalone, 98 N.Y.S. (2d) 167 (N.Y., 1950) J. A. M. A. **144:** *708 (Oct. 21) 1950.*—Action for declaratory judgment to determine paternity of the child as between first and second husband of the plaintiff. Expert testimony based on blood grouping tests indicated that the first husband could not have been the father. The supreme court, special term, Bronx County, said that medical testimony is *not conclusive* but must be given times were prolonged though variable and falsely *indicated* prothrombin deficiency. Evaluation of variations of prothrombin concentration cannot properly be made by employing the single stage procedure, which neglects the role of prothrombin conversion accelerators.

American Journal of Human Genetics, Baltimore

3:195-302 (Sept.) 1951

New Syndrome Combining Developmental Anomalies of Eyelids, Eyebrows and Nose Root with Pigmentary Defects of Iris and Head Hair and with Congenital Deafness. P. J. Waardenburg.—p. 195.
Statistical Problems Posed by Waardenburg's Data on Dystopia Canthorum and Associated Anomalies. C. W. Cotterman.—p. 254.
*Genetic and Statistical Study of Psoriasis. A. G. Steinberg, S. W. Becker Jr., T. B. Fitzpatrick and R. R. Kierland.—p. 267.
Color Vision Anomaly Showing Holandric (Y-Linked) Transmission. S. C. Reed, R. K. Cambier and J. E. Applen.—p. 282.

Genetics of Psoriasis.—This study is based on information concerning parents, siblings, spouses, and children of 464 consecutive unselected patients with psoriasis. The predominance of male patients with psoriasis was found to be essentially the same as the predominance of males in these families. No relation was found between the sex of the patient and that of his or her affected parent or sibling. There was no relation between birth order and the occurrence of psoriasis. Hyperuricemia occurred in 48% of 98 psoriatic men tested and in 27% of 69 psoriatic women tested. The incidence of psoriasis among the patients' siblings when neither of the patients' parents was psoriatic was 2.45%. It was 9% when one parent was psoriatic. No patient reported that both parents had psoriasis. The incidence of psoriasis among the patients' parents was 5.9%. The data indicate the presence of a hereditary component in the causation of psoriasis. This component is not—as has been postulated by previous workers—a single dominant gene with incomplete penetrance. It is necessary to assume a minimum of two genes to explain the data. A possible explanation based on two autosomal recessive genes, the double recessive being predisposed to psoriasis, is advanced.

American Journal of Obstetrics & Gynecology, St. Louis

63:241-478 (Feb.) 1952. **Partial Index**

Treatment of Cancer of Vulva. W. G. Cosbie.—p. 251.
Myomatous Uterus Complicated by Pregnancy. J. Parks and R. H. Barter.—p. 260.
Cesarean Section Death. C. A. Gordon.—p. 284.
Homologous Ovarian and Testicular Tumors. A. A. Marchetti and L. G. Lewis.—p. 294.
Mesodermal Mixed Tumors of Body of Uterus, with Report of Two Cases. J. A. Hardy Jr. and V. Moragues.—p. 307.
Role of Vaginal Plastic Surgery in Rehabilitation of Women Past Age 60. W. R. Payne.—p. 317.
Studies in Cholinesterase-Hormone Relationship. A. C. Barnes and J. W. Epperson.—p. 326.
Prolonged Labor. S. H. Starr.—p. 333.
Morbidity Studies in 1,000 Consecutive Hysterectomies. R. S. Cron, J. Stauffer and H. Paegel Jr.—p. 344.
Effects of Ligation of Inferior Vena Cava and Ovarian Vessels on Ovulation and Pregnancy in Human Being. C. G. Collins, B. B. Weinstein, R. O. Norton and H. D. Webster.—p. 351.
Bacteroides Infections of the Female Genital Tract. C. E. Clark and A. F. Wiersma.—p. 371.
Coronary Artery Disease in Pregnancy. C. L. Mendelson.—p. 381.
Vaginal Length and Incidence of Dyspareunia Following Total Abdominal Hysterectomy. J. F. Jewett.—p. 400.
*Poliomyelitis *in* Pregnancy and Puerperium: Experience in Detroit Epidemics of 1949 and 1950. H. D. Priddle, W. R. Lenz, D. C. Young and C. S. Stevenson.—p. 408.
Detection and Treatment of Unsuspected Tuberculous Endometritis. W. Levine and I. I. Kurland.—p. 420.
Incision of Placenta at Cesarean Section: Cause of Fetal Anemia. R. S. Siddall and R. H. West.—p. 425.
Chorionepithelioma. R. W. Mohler and E. L. McConnell.—p. 428.
Metastasis from Carcinoma of Cervix Uteri Simulating Coronary Disease. G. A. Hahn.—p. 433.

Poliomyelitis in Pregnancy and Puerperium.—This paper reviews 34 cases of pregnancy complicated by poliomyelitis during the 1949 and 1950 epidemics, in which treatment was given in a hospital that admits from 75 to 80% of all reported patients with poliomyelitis in Detroit. There was one death, a mortality of 2.9% in pregnant patients as compared to 5.3% in nonpregnant patients. The material presented confirms earlier reports of increased susceptibility to poliomyelitis during pregnancy. The expected incidence of pregnancy among the 186 women admitted to the poliomyelitis service was between 11 and 12, whereas the actual incidence was 34. Thus the risk of poliomyelitis was three times as great for pregnant women. An analysis of cases by trimester did not support earlier observations of increased severity during the third trimester; in this series the severest cases occurred during the first six months of pregnancy. If there was no pelvic dystocia, labor was usually normal. The incidence of bulbar paralysis in the 34 pregnant women was 20.7%, of spinal paralysis 44%, and of the nonparalytic form of poliomyelitis 35.3%. There were also 38 women who had had a delivery within 20 months of contracting poliomyelitis. In this postpartum group the incidence of bulbar paralysis was 26.3%, of spinal paralysis 50%, and of nonparalytic poliomyetis 23.7%. There was one death (2.6% mortality). Among the women of childbearing age who were neither pregnant nor in the postpartum period when they contracted poliomyelitis, 16% had bulbar and 48.6% spinal paralysis, and 35.4% had nonparalytic poliomyelitis. A possible correlation between the phase of the menstrual cycle in nonpregnant women and the onset of the symptoms of poliomyelitis has been suggested, and further investigations are being carried out.

American Journal of Ophthalmology, Chicago

35:167-300 (Feb.) 1952

Effect of Sutures and of Thrombin upon Ocular Wound Healing: Jackson Memorial Lecture. J. H. Dunnington and E. F. Regan.—p. 167.
Lens-Induced Uveitis and Glaucoma: Part I. Endophthalmitis Phaco-*Anaphylactica.* S. R. Irvine and A. R. Irvine Jr.—p. 177.
New Vasodilator in Ophthalmology. J. J. Stern.—p. 187.
Response of Retinal Vessels to Priscoline in Various Vascular Conditions: Study I. M. R. Cholst, H. F. Schilback, M. B. Handelsman and L. M. Levitt.—p. 191.
Implantation Cyst of Conjunctiva. E. W. Perkins.—p. 196.
Pseudoglioma: Clinicopathologic Study of 15 Cases: Part II. Pathologic Classification. T. E. Sanders.—p. 199.
Syndrome of Glaucomato-Cyclitic Crises: Report of Case. E. Billet.—p. 214.
Retroplacement of Inferior Oblique at Its Scleral Insertion. C. Berens, H. G. Cole, S. Chamichian and M. V. Enos.—p. 217.
Observations on Vitamin Deficiencies: In Eye, Ear, Nose, and Throat Clinic of Japanese Prison Hospital. M. E. Pohlman and E. F. Ritter Jr.—p. 228.
Autodemonstration of "Physiologic Nystagmus." G. L. Walls.—p. 231.
Evaluation of Massachusetts Vision Test for Visual Screening of School Children. E. R. Yasuna and L. S. Green.—p. 235.
Menière's Disease Associated with Traumatic Hyphemia and Glaucoma. H. McGrath.—p. 241.
Trichlorethylene as Analgesic in Ophthalmic Practice. B. Offenbach.—p. 250.
True Polycoria. N. S. Jaffe and P. Knie.—p. 253.

Angiology, Baltimore

3:1-68 (Feb.) 1952

*Influence of Pentaerythritol Tetranitrate (Peritrate) on Acute and Chronic Coronary Insufficiency. T. Winsor and P. Humphreys.—p.1.
*Study of Therapeutic Action and Toxicity of Pentaerythritol Tetranitrate. A. Perlman.—p. 16.
*Peritrate in Peripheral Arterial Diseases. S. S. Samuels and E. D. Padernacht.—p. 20.
Electroencephalographic Observations in Cases of Aneurysm and Arteriovenous Fistula of Head and Neck. M. W. Laufer and H. B. Shumacker Jr.—p. 22.
Rational Elimination of Side Reactions and/or Tolerence in Development of Potentially Valuable Drugs. F. F. Yonkman and E. D. Freis.—p. 36.
Sequelae of Deep Thrombosis in Lower Limbs: Follow-Up Study of Patients Initially Treated by Conservative Measures. I. C. Höjensgård.—p. 42.
Role of Sympathectomy in Arteriosclerosis Obliterans. B. Seligman.—p. 48.
Some Vascular Considerations in Treatment of Arteriosclerosis Obliterans. J. Flasher.—p. 53.

"Peritrate" in Coronary Insufficiency.—Pentaerythritol tetranitrate ("peritrate"), a powerful explosive of the same group as nitroglycerin and erythritol tetranitrate, is of value in the treatment of the precordial pain of angina pectoris. Pentaerythritol tetranitrate is known also as PETN, "penthrite," "hasethrol," or CH 27. The effect of the drug was studied in 250 patients, of whom 125 had angina pectoris; the other 125 patients, who were of the same age groups and had other diseases that produced pain in and around the chest but did not have angina pectoris, served as controls to study the psychological and analgesic properties of the drug. When it was given in average doses of 10 mg. 3 times daily before meals, a satisfactory improvement in the precordial pain was produced in 78.4% of subjects. This drug was more effective in reducing the frequency of attacks than placebos, theobromine calcium salicylate ("theocalcin"), aminophylline, or khellin. Ten mg. three times a day reduced the nitroglycerin requirement, increased exercise tolerance, modified the negative S-T segment shifts ordinarily occurring after exercise, and returned the abnormal resting electrocardiogram toward normal in a significant number of subjects. Side-effects were mild and consisted of headaches, nausea and rash.

Therapeutic Action and Toxicity of "Peritrate."—Pentaerythritol tetranitrate ("peritrate") was given to 64 patients, of whom 27 had arteriosclerotic or hypertensive heart disease. Daily doses of from 30 to 160 mg. were given for from 1 to 30 weeks. Twelve obtained relief of a major manifestation or manifestations while taking the drug; intermittent claudication was the most effectively relieved condition. Headache occurred in 1 of 64 patients who were given pentaerythritol tetranitrate; this was recorded as an untoward effect of the drug, although the patient had had similar pains before. The drug seems to be relatively nontoxic in two to three times the dose necessary to produce its maximal therapeutic effects. It appears to have a vasodilating effect that is of value in the management of angina pectoris and intermittent claudication.

"Peritrate" in Peripheral Arterial Diseases.—Intermittent claudication was improved in 20 of 30 cases of arteriosclerosis obliterans in which pentaerythritol tetranitrate ("peritrate") was given, but it is suggested that final determination of the value of this, as well as of other vasodilators, must await extensive objective studies of a large series of cases over a long period of time. Psychogenic aspects of the symptoms of intermittent claudication play an important part in any clinical study of the peripheral arterial diseases.

Annals of Internal Medicine, Lancaster, Pa.

36:279-510 (Feb.) 1952

*The Acute Radiation Syndrome: Study of Nine Cases and Review of Problem. L. H. Hempelmann, H. Lisco and J. G. Hoffman.—p. 279.

Acute Radiation Syndrome.—As a consequence of two temporarily uncontrolled fission reactions, 10 persons were exposed to penetrating ionizing radiations, and 9 of these are described. Two died, and one of the survivors had typical manifestations of the acute radiation syndrome. Hematological changes were demonstrated in this patient and in four of the six other exposed but asymptomatic persons. The radiations were chiefly moderately fast neutrons and hard gamma rays. The neutrons had limited powers of tissue penetration despite their rather high energies. They were absorbed largely in the superficial few inches of tissue nearest the experimental nuclear reactors. The hands and abdomen of the two fatally injured persons received an exceptionally heavy dose of radiation. These patients had nausea, vomiting, prostration, and a mild fall in blood pressure during the first postexposure day. This was followed by a period of relative well-being, during which the patients had few symptoms except those due to localized damage. Within a week after exposure both patients went into the toxic phase of the syndrome, characterized by high fever, weight loss, and gastrointestinal symptoms. Despite administration of whole blood, plasma, fluids, and penicillin, one patient died on the 9th day, and the other on the 24th day after the accident. The one survivor who developed clinical manifestations of the acute radiation syndrome had nausea and vomiting of a moderate degree. Except for fever and prostration of several days' duration, he was asymptomatic during the two week period of hospitalization. During the third week he lost some of the hair of the scalp and beard; he also experienced fatigability on exertion for several months. There was evidence of severe damage to the germinal tissues, but this proved to be temporary. Five years after exposure this man is in good health, although bilateral radiation cataracts have developed. The remaining six survivors showed no symptoms, even though the radiation doses of several did not differ greatly from that of the survivor with symptoms. All of the asymptomatic survivors were in good health three and a half years after the accident.

Bulletin of Johns Hopkins Hospital, Baltimore

90:105-184 (Feb.) 1952

*Effect of Long Continued Subcurative Doses of Penicillin During Incubation Period of Experimental Syphilis. D. H. Hollander, T. B. Turner and E. E. Nell.—p. 105.
Protein-Binding Properties and Clinical Effects of 3-Hydroxy-2-Phenylcinchoninic Acid. B. V. Jager.—p. 121.
Clinical Use of Artificial Circulation with Note on Intra-Arterial Transfusion. A. M. Dogliotti.—p. 131.
Effect of Cortisone and ACTH on Ocular Inflammation Secondary to Injection of Irritant Substances. A. C. Woods and R. M. Wood.—p. 134.
Studies of Combinations of Antibiotics in Vitro and in Experimental Infections in Mice. E. A. Bliss, P. T. Warth and P. H. Long.—p. 149.
Observations on Possible Role of Nucleic Acid Exchange Reactions in Pneumococcal Capsular Type Transformation: Preliminary Note. R. Austrian.—p. 170.

90:1-160 (Feb. [Supplement]) 1952

Dr. Halsted. G. W. Heuer.—p. 1.

Subcurative Doses of Penicillin During Incubation of Experimental Syphilis.—Most syphilologists believe that the subsequent course of syphilis may be altered if subcurative amounts of penicillin are given during the incubation period. In the present investigation it was found that single subcurative doses of penicillin prolong the incubation period of experimental rabbit syphilis in direct relationship to the size of the dose up to a limit of about 30 to 40 days. In rabbits in which subclinical infection was maintained by multiple small doses of penicillin for various periods up to 20 weeks, the incubation periods corresponded remarkably closely to those predicted on the basis of theoretical considerations. The evolution of the syphilitic infection after termination of treatment was similar to that observed in untreated animals. Symptomless infection was not observed; rabbits were either cured or subsequently developed lesions. Serological changes were not detected during greatly prolonged incubation periods; even after 20 weeks of treatment infected animals failed to show detectable antibodies either to beef heart antigen or to T. pallidum as tested by the treponemal immobilization test. No evidence of penicillin resistance was noted. These experiments indicate that in the rabbit the prolonged presence of a relatively small number of treponemes in a subclinical syphilitic infection does not stimulate the immune mechanisms of the host sufficiently to greatly modify the evolution of the disease when the administration of penicillin is discontinued. These studies provide additional evidence that during the incubation period syphilis may be cured with minimal amounts of penicillin. The generalized use of penicillin in the prophylaxis and treatment of a variety of conditions has unquestionably resulted in cure of many syphilitic infections that were still in the incubation period. Indeed, the seeming decline in incidence of syphilis since the advent of penicillin may be due to this more than to its use in cases of syphilis that have been diagnosed.

Georgia Medical Association Journal, Atlanta

41:38-74 (Feb.) 1952

Methyl Alcohol Poisoning: Account of 1951 Atlanta Epidemic. M. N. Cooper, G. L. Mitchell Jr. I. L. Bennett Jr. and F. H. Cary.—p. 48.
Transitory Ocular Divergence Paralysis Due to Sickle Cell Anemia. C. D. Benton Jr.—p. 52.
Duodenal Adenoma: Report of Case. G. T. Nicholson, C. M. Henry, A. G. Singer and W. H. Good Jr.—p. 54.
Role of Cerebral Angiography in Management of Cerebral Vascular Accidents. J. R. Simpson, E. Walker and W. W. Moore.—p. 55.
Abdominal Puncture as Diagnostic Aid. C. M. Henry.—p. 59.

Iowa State Medical Society Journal, Des Moines

42:43-86 (Feb.) 1952

Common Lesions of Breast. J. W. Cline and P. R. Westdahl.—p. 43.
Physical and Mental Health in the Aged. E. C. Horvath and S. M. Horvath.—p. 47.
Remarks on Sudden Death. W. B. Bean.—p. 52.
Recent Developments in Ocular Therapeutics. N. G. Douvas.—p. 54.

42:87-134 (March) 1952

Psychosomatic Aspects of Depression. W. F. Roth Jr.—p. 94.
Psychiatric Aspects of Gastrointestinal Disorders. E. G. Billings.—p. 101.
Management of Convergent Strabismus Esotropia. A. E. Braley.—p. 106.
Foreign Body in Caecum Causing Symptoms of Acute Appendicitis. H. C. Schwarnweber.—p. 110.

Journal of Applied Physiology, Washington, D. C.

4:629-698 (Feb.) 1952

Effect of Sodium Thiopental on Circulatory Response to Positive Pressure Inflation of Lung. H. L. Price, E. H. Conner, J. D. Elder and R. D. Dripps.—p. 629.
Comparison of Energy Expenditure of Children Measured with Two Types of Apparatus. C. M. Taylor, O. F. Pye, M. Ellis and F. Godshall.—p. 635.
Pulmonary Function Studies in Healthy Men and Women 50 Years and Older. F. E. Greifenstein, R. M. King, S. S. Latch and J. H. Comroe Jr.—p. 641.
Hormonal and Renal Mechanisms of Cold Diuresis. R. A. Bader, J. W. Eliot and D. E. Bass.—p. 649.
*Renal Responses to Exercise, Heat and Dehydration. J. H. Smith, S. Robinson and M. Pearcy.—p. 659.
Effect of Diet upon Urinary Amylase Excretion. B. W. Smith and J. H. Roe.—p. 666.
Activity of Acetylcholine System in Human Epileptogenic Focus. D. B. Tower and K. A. C. Elliott.—p. 669.
Renal Hemodynamics Following Intravenous Administration of Gelatin. A. J. Michie, C. E. Koop, J. M. Walker and others.—p. 677.
Sensory Response in Man Following Intra-Arterial Injection of Hypertonic Glucose and Saline. O. T. Kuzma, J. A. Polhemus and H. R. Bierman.—p. 682.
Peripheral and Visceral Vascular Effects of Exercise and Postprandial State in Supine Position. M. Lowenthal, K. Harpuder and S. D. Blatt.—p. 689.

Journal of Aviation Medicine, St. Paul

23:1-100 (Feb.) 1952. **Partial Index**

Legal Aspects of Air Transportability of Sick. G. L. Dunnahoo.—p. 3.
Flight Comfort and Safety for Patients. N. B. Johnston.—p. 10.
In-Flight Problems in Air Transportation of Patients. J. P. Pollard.—p. 15.
Medical Aspects of Helicopter Air Evacuation. M. T. Martin.—p. 20.
Cardiovascular Problems in Aviation Medicine: Evaluation of Heart Murmurs. J. M. Packard and A. Graybiel.—p. 24.
*Air Transportation of Persons with Cardio-Respiratory Disease and/or Injury. H. A. Smedal.—p. 33.
Effect of Altitude on Simulated Sinus Fractures and Other Conditions Introducing Air into Skull. W. L. Burkhardt and L. E. Moses.—p. 38.
Flight Surgeon and Flight Safety. W. L. Jones.—p. 44.
Method of Evaluating Aircraft Acoustical Comfort. S. Lippert and M. M. Miller.—p. 54.
Analysis of Pilots' Eye Movement in Flight. J. L. Milton.—p. 67.
Observations on Weather-Sensible Arthritics During Controlled Exposures to Low and High Atmospheric Pressures. H. L. Jones and E. Reeves.—p. 77.

Air Transportation of Cardiorespiratory Patients.—Largely on the basis of theoretical discussion Smedal believes that persons with coronary heart disease tolerate anoxia of a moderate degree very well. One should therefore be able to be quite liberal in advice to coronary disease patients in regard to travel by air. With the extensive use of pressurized cabins much of the hazard for patients with cardiorespiratory disease or injury has been diminished and even eliminated. The chief remaining hazard is explosive decompression. To avoid the sudden anoxia involved in sudden decompression, persons with cardiorespiratory disorders must be protected by an adequate source of supplemental oxygen. Precautions must be taken also that the patients do not become anxious, frightened, tired, motion sick, or anoxic. With adequate care and preparation, most patients with cardiorespiratory disorders may be transported by air.

Medicine, Baltimore

31:1-132 (Feb.) 1952

*Study of Sarcoidosis: Based on Combined Investigation of 160 Cases Including 30 Autopsies from the Johns Hopkins Hospital and Massachusetts General Hospital. W. T. Longcope and D. G. Freiman.—p. 1.

Sarcoidosis: Combined Investigation of 160 Cases.—This extensive monograph stresses among other factors that the etiology of the disease now generally known as sarcoid, sarcoidosis, or as Besnier-Boeck-Schaumann's disease is still obscure. Its relation to tuberculosis or other forms of granuloma is not definitely known, and conclusive demonstration of its presence depends on the histological structure of the lesions. It resembles Hodgkin's disease. Schaumann, with this in mind, used the term "benign lymphogranulomatosis" to distinguish it from "malignant lymphogranulomatosis" or Hodgkin's disease. Sarcoidosis is fairly common, often escapes detection, may be incapacitating, sometimes destroys an organ such as the eye, and may cause death. In many respects sarcoidosis has the attributes of a pathological and clinical entity, assuming the character of a specific chronic infection, which progresses sluggishly, is widely disseminated, heals slowly, relapses frequently, and causes damage essentially not by intoxication, but by mechanical injury. There is no evidence that it is caused by any known pathogenic agent. Efforts to transmit it to animals have failed. Furthermore, sarcoidosis does not seem to occur spontaneously in animals. Under these circumstances, the scope for further investigation concerning the nature of sarcoidosis is limited. Its prevalence in the Negro race and its tendency to appear in rural districts suggest that information might be gained through epidemiological studies. It might be possible to determine why sarcoids seem to arise in injured tissue. Whether this is due to infection by contact, to metastasis, or to a quality inherent in the tissues of the patient with sarcoidosis is not known. There is no explanation of why the lesions of sarcoidosis heal. This process is slow, and is usually characterized by hyalinization of individual epithelioid bodies. This may take place in one place while the disease progresses in another organ or even in the same organ. Studies on the effects of cortisone and corticotropin on sarcoidosis may aid in a better understanding of the manner in which healing takes place, for, according to recent reports, the influence of these two hormones is exerted on the epithelioid bodies as well as on the granulomatous lesions.

New England Journal of Medicine, Boston

246:205-242 (Feb. 7) 1952

Preliminary Observations on Mental Disturbances Occurring in Patients Under Therapy with Cortisone and ACTH. L. D. Clark, W. Bauer and S. Cobb.—p. 205.
*Erythema Multiforme Bullosum (Stevens-Johnson Syndrome). W. N. Agostas, N. Reeves, E. D. Shanks Jr. and V. P. Sydenstricker.—p. 217.
Problems of Ischemia of Lower Extremity. G. R. Dunlop.—p. 219.
Foreign-Body Perforations of Gastrointestinal Tract: Report of Six Cases. L. Persky and E. D. Frank.—p. 223.
Digitalis Poisoning and Its Treatment. B. M. Cohen.—p. 225.

Erythema Multiforme Bullosum.—The occurrence of erythema multiforme bullosum (Stevens-Johnson syndrome) is reported in a Negro woman, aged 22, and in a Negro boy, aged 14. In both patients treatment with sulfonamides and penicillin proved ineffective. On the 10th hospital day the woman patient was comatose and treatment with corticotropin (ACTH) was started; 25 mg. of the drug were given intramuscularly every six hours for 24 hours, then 25 mg. every eight hours. Within 48 hours of institution of corticotropin therapy the temperature fell to normal and consciousness and orientation returned rapidly. Corticotropin was discontinued after six days of treatment, a total dose of 475 mg. having been given. The skin lesions healed gradually by desquamation and with pigmentation. The boy was given 100 mg. of cortisone acetate intramuscularly every 8 hours on the first day, 100 mg. every 12 hours on the second day, and 100 mg. daily thereafter. Within 24 hours after the start of cortisone therapy the lesions had diminished markedly and in 96 hours all the lesions had cleared. Within seven weeks the patient had a recurrence of the skin eruption. He was given 25 mg. of corticotropin intramuscularly every six hours. After four days of therapy it was thought that progress was not satisfactory, and treatment was changed to cortisone acetate, 100 mg. orally every 12 hours on the first day, then 100 mg. daily. There was complete clearing of the lesions by the fifth day of cortisone treatment. Erythema multiforme bullosum is an acute febrile, sometimes fulminating systemic disease that may last from a few days to several weeks. Lesions involving the mucous membranes (conjunctivas and orifices), skin and respiratory tract appear almost immediately. The skin lesions may be macular, papular, annular, iris-type, or vesicobullous. Though usually a self-limited disease, it has caused a number of deaths. There is a definite tendency to recurrence. The etiology of the disease is unknown, and as with any such disease its treatment is unsatisfactory and mainly symptomatic. The theory that the disease has an allergic etiology appears to be the most tenable, and a sensitivity reaction to either drugs or bacterial products is to be considered. In addition to the author's two cases, the report of one case is cited from the literature with a similar dramatic response to corticotropin and cortisone.

FOREIGN

Annales de Médecine, Paris

52:747-854 (No. 8) 1951

*Cortisone, Corticotropin (ACTH) and Infections. F. Coste, B. Piguet, P. Galmiche and J. Cayla.—p. 747.
Rare Cause of Aneurysm of Pulmonary Artery: Latent Embolism in Course of Subacute Venous Septicemia. H. Boucher, M. Protar and J. Bertein.—p. 803.
Relationship Between Inclination of Cranial Base and Delayed Constitutional Maturation in Man. G. Pankow.—p. 820.

Cortisone, Corticotropin, and Infections.—In an extensive review of the subject, the authors reached the following conclusions: In general cortisone and corticotropin (ACTH) exert a suppressive effect on the symptoms of acute bacterial or virus infections in man. While these drugs do not check the infectious process, they do not make it worse, according to the reports available to the authors. When employed in much larger than the usual clinical doses, the two hormones usually aggravate acute experimental infections, despite their suppressive effect on symptoms. A number of acute infections have occurred in patients with rheumatic and blood diseases treated with cortisone and corticotropin: in particular acute pneumonias and staphylococcic infections at the site of injection of the drugs were common. The occurrence, during hormone therapy, of ulcers in the digestive tract and thromboembolic episodes of obscure origin may have been related to infection. The incidence of infectious side-effects of treatment with adrenal cortex preparations has not yet been determined statistically. The authors presume that such undesirable side-effects occur in about 10% of the patients treated with these drugs. Moderate doses of cortisone and corticotropin aggravate experimental tuberculosis in animals that are resistant to tuberculosis, such as rats and mice, but have a relatively favorable effect in guinea pigs, which are highly susceptible to tuberculosis. There is a definite risk that cortisone and corticotropin therapy may aggravate clinical, progressive or old tuberculosis in man. Consequently, in spite of the suppressive effect of these drugs on the symptoms of tuberculosis, their use as an adjuvant in this disease does not seem advisable. Exceptions to this rule, however, are conceivable in the presence of severe nontuberculous disease in a tuberculous patient. In such cases treatment with corticotropin and cortisone should be combined with antibiotics administered during and after the hormone treatment, and with rigid control of tuberculous lesions or sequelae. Although it cannot be definitely excluded that adrenal cortex preparations may directly stimulate growth of bacteria, these drugs rather seem to favor the spread of bacteria by means of metabolic and tissue effects which render the therapy anti-inflammatory. It has not been established that administration of therapeutic doses of these drugs prevents formation of antibodies, and certain allergic reactions may be attenuated only by very high doses. Inhibition of the diapedesis of leukocytes, of phagocytosis, and of mitosis, reduction of vascular permeability, and increase of tissue permeability may play their part in the promotion of infection by the adrenal cortex preparations.

Aparato Respiratorio y Tuberculosis, Santiago

16:183-234 (Oct.-Dec.) 1951

*Thiosemicarbazone in 96 Cases of Pulmonary Tuberculosis: Immediate Results. H. Orrego Puelma, M. Zanolli Granello and R. Olmedo Cruz.—p. 183.
Intestinal Tuberculosis (Comparative Study of Deaths from Pulmonary Tuberculosis With and Without Streptomycin Therapy). H. Orrego Puelma and S. Raddatz Ebensperger.—p. 203.

Thiosemicarbazone in Pulmonary Tuberculosis.—Ninety-six patients between the ages of 10 and 60 years who had pulmonary tuberculosis were treated with thiosemicarbazone. The disease was in an advanced or very advanced stage, with or without cavitation. The treatment started with daily doses of 25 mg., which were increased every week by 25 mg. up to an average daily dose of maintenance of 125 mg. The total doses varied from 5 gm. given in two months to 25 gm. given in 10 months. In most cases the drug caused improvement of the general condition, with control of fever, diminution of cough and sputum, increase of body weight, and improvement in the erythrocyte sedimentation rate. The sputum became negative for tubercle bacilli in 21 of 86 cases in which it was positive before the treatment. In the group of 52 patients in an advanced stage of the disease, the pulmonary lesion, as seen by roentgen examination of the chest, improved in 37, did not change in 11, and progressed in 4 cases. In the group of 42 patients in a very advanced stage of the disease, the pulmonary lesion improved in 24 cases, did not change in 10, and progressed in 8 cases. In 65 patients with cavitation, the size of the cavity diminished in 21 cases, did not change in 35, and progressed in 9 cases. Laryngeal and tracheobronchial tuberculosis was associated with pulmonary tuberculosis in 11 cases each. The disease was cured during thiosemicarbazone treatment in three cases of laryngeal, and three of tracheobronchial tuberculosis. Treatment with these doses was well tolerated in all but three cases, two that were complicated by jaundice and one by renal disorder. The treatment is an adjuvant to surgical collapse as it transforms exudative and superactive forms of the disease into a local condition which is propitious for the intervention.

Australian J. Exper. Biol. and M. Science, Adelaide

29:401-476 (Nov.) 1951. **Partial Index**

Attempt at Chemical Identification of "Neurocletin" (Substance Evoking Axon-Sprouting). H. Hoffman and P. H. Springell.—p. 417.
*Haemagglutinin of Haemophilus Pertussis: IV. Reactions and Antibody Response in Babies and Children Following Administration of Haemagglutinin Adsorbed on Aluminium Phosphate. S. Fisher, M. F. Warburton, H. N. B. Wettenhall and S. W. Williams.—p. 425.
Absorption and Metabolism of Substances with Vitamin K Activity Under Normal Conditions and After Biliary Obstruction: Study in Man and Rabbits, Including Vitamin K Saturation Test. P. Fantl, J. F. Nelson and G. J. Lincoln.—p. 433.
Influence of Sodium Salicylate and Acetyl Salicylic Acid on Release of Histamine in Anaphylaxis. E. R. Trethewie.—p. 443.
Effects of Lymphatic Obstruction and of Posture on Absorption of Protein from Peritoneal Cavity. F. C. Courtice and A. W. Steinbeck.—p. 451.
Pleurodynia Virus Pathogenic for Infant Mice. N. Atkinson, J. Dineen and J. S. Robertson.—p. 463.
Role of Adrenal Cortex in Diabetic Ketosis. S. Rose.—p. 469.

Antibody Response to Hemagglutinin of Hemophilus Pertussis.—This paper deals with reactions and antibody response in babies following injection of pertussis hemagglutinin. At first, soluble (extracted) hemagglutinin was used; later antigen adsorbed on aluminum phosphate floccules was employed, as the latter was more stable. It was found that the adsorbed hemagglutinin injected into babies in single subcutaneous or intramuscular doses of 1 ml., or two subcutaneous doses of 0.1 ml. or 0.3 ml. spaced one to two and one-half months apart, produced mean serum antihemagglutinin titers between 11.3 and 32. The single subcutaneous doses resulted in significantly lower serum antibody levels. Local and general toxic effects, observed in over 270 subjects, were mild in babies and young children with no history of previous immunization against whooping cough. The reactions were more marked in older children and in those previously sensitized with H. pertussis, but were no more severe than those associated with administration of bacterial pertussis vaccine in customary doses.

British Journal of Radiology, London

25:57-112 (Feb.) 1952

Ionization Produced by High Voltage Radiation in Extrapolation Chamber with Walls of Various Atomic Numbers and Its Relation to that to be Expected Theoretically. A. A. K. Ibrahim and C. W. Wilson.—p. 57.
Uptake of Radioactive Phosphorus in Normal Brain and Brain Tumours. J. E. Stapleton, W. McKissock and H. E. A. Farran.—p. 69.
Osteoarthritis of Hip Joint. J. F. Brailsford.—p. 76.
Apparatus for Rapid Estimation of Tracer Quantities of Radioactive Isotopes in Excreta. N. Veall and H. Vetter.—p. 85.
Effect of Ionizing Radiations on Broad Bean Root: Dependence of X-Ray Sensitivity on Dissolved Oxygen. J. Read.—p. 89.
*Use of Small Protection Films for Estimation of Doses Received on Fingers and Hands During Radium Manipulations. T. M. Robb and R. E. Ellis.—p. 100.

Estimation of Irradiation of Fingers During Radium Manipulations.—The use of ionization chambers to measure radiation received by the fingers and hands of radiotherapists is technically difficult. This led to an attempt to assess these doses by measuring their effect on small x-ray films 1 sq. cm. in area, worn on the pulp side of the finger tip or hand. Packed in waterproof material, they may be worn without discomfort or impediment, and withstand the customary washing and "scrubbing up" before an operation. To estimate the radiation received by the films their densities after exposure and development have been compared with similarly packed films that have received known doses of γ rays, and have been processed with the test films. Densities were compared either visually or by means of a Hilger photoelectric microphotometer. A summary of the initial results obtained during a variety of radium manipulations are given in tables.

British Medical Journal, London

1:341-396 (Feb. 16) 1952

Rheumatic Diseases in the U. S. A. J. J. R. Duthie.—p. 341.
*Involution of Cervix. H. C. McLaren.—p. 347.
Correction of E.S.R. in Anaemia: Experimental Study Based on Interchange of Cells and Plasma Between Normal and Anaemic Subjects. J. C. F. Poole and G. A. C. Summers.—p. 353.
Cortisone in Idiopathic Steatorrhoea. J. Badenoch.—p. 356.
Mercury Nephrosis in Young Children, with Special Reference to Teething Powders Containing Mercury. V. K. Wilson, M. L. Thomson and A. Holzel.—p. 358.
Fatal Hypokalaemic Alkalosis with Tetany During Liquorice and P.A.S. Therapy. N. J. Roussak.—p. 360.
Case Illustrating Hazards of Manipulative Treatment in Lumbo-Sacral Disk Protrusions. R. Hafner.—p. 361.

Involution of the Cervix.—Of 262 women who submitted to examination of the cervix of the uterus six weeks after delivery, 121 had erosions. The 141 women who had no erosions served as controls. Of the 121 patients, 43 (35%) had backache, and, of the 141 controls, 26 (18%) had this symptom. Backache and cervical erosions could not be correlated, since backache became uncommon after four to five months and since, of nine patients with persistent backache, six had healed and three had unhealed cervical erosions. Six weeks after delivery 34 (28%) patients with erosions had a vaginal discharge and 21 (17%) had only traces, as compared to 25 (18%) of the controls who had a vaginal discharge and 20 (14%) controls who had traces. Comparison of clinical observations of the cervix with the patients' symptoms of discharge suggested that in most cases the cervix was not the source of discharge; postpartum cervical mucus, possibly because of its tenacious quality, seldom reaches the vulva in amounts sufficient to cause leukorrhea. Of the 121 patients with cervical erosions, 77 were not treated but were reexamined at intervals of six to eight weeks. If the erosion persisted over five months it was considered unhealed. Spontaneous healing occurred in 49 patients, while the erosion persisted in 28. The final number of patients with discharge was eight with healed erosions and seven in whom discharge and persistent erosion coexisted. Postnatal erosions are, in fact, innocuous and usually resolve without treatment. Persistent erosions are usually innocuous, but excessive mucous discharge may require treatment by cautery, as in 4 (5%) of the 77 patients who were not treated previously. Comparison of 77 squamocolumnar biopsy specimens from both healed and persistent erosions taken at intervals up to one year after delivery, with 142 specimens obtained six weeks after delivery, showed postpartum involution; biopsies from the edge of healed or persistent erosions were similar; both depicted advancing involution.

Deutsche medizinische Wochenschrift, Stuttgart

77:225-256 (Feb. 22) 1952. **Partial Index**

*Need of Change in Interpretation of Experimental B_1 Avitaminosis and in Concept of Vitamin B_1 as Antineuritic Substance. H. Luckner and R. Magun.—p. 225.
Dependence of Reaction in Allergic Tests and of Desensitizations on Meteorlogic Factors. G. Wildführ.—p. 229.
Diagnosis and Therapy of Congenital Angiocardiopathies. J. Jacobi, M. Loeweneck and F. Northoff.—p. 232.
Penicillin Therapy in Syphilis of Internal Organs. H. Dennig.—p. 237.

Change in Concept of Vitamin B_1 as Antineuritic.—Luckner and Magun point out that the disturbance in cerbral carbohydrate metabolism at the pyruvic acid phase, discovered by Peters in 1935, was interpreted by him and many others as proof of the importance of vitamin B_1 as an antineuritic factor. Newer investigations, however, revealed more differences than similarities between human beriberi and the manifestations of vitamin B_1 deficiency in animals. Furthermore no functional defects in the peripheral nerves can be produced in either man or animals if the deficiency is limited to vitamin B_1. For this reason, B_1 avitaminosis cannot be identified with the polyneuropathic form of beriberi. Neurological and neurohistological studies demonstrated that the impairment of nervous function demonstrable in animals with deficiency in vitamin B_1 is localized in the brain stem. The impairment of the function of the peripheral nerves, which followed the insufficient nutrition during and after the last war, was due to more complex damages than those that follow pure vitamin B_1 deficiency. Many clinical cases during and after the war revealed that lesions of the peripheral nerves, which had been ascribed to B_1 deficiency, showed no change in objective symptoms or in their course when vitamin B_1 was administered, regardless of the dose. Vitamin B_1 has no antineuritic effect. The improvement observed in patients with polyneuritis following administration of vitamin B_1, especially when it has been given in large doses, is due to an experimentally demonstrable analgesic action rather than to its compensating effect on an existing deficiency.

Die Medizinische, Stuttgart

Year 1952:271-304 (March 1)

Evaluation and Treatment of Cardiac and Circulatory Disturbances in Children (II). K. Hofmeier.—p. 271.
Additional Contribution to Estradiol-Progesterone Hormone Antagonism. A. Obal.—p. 276.
*Clinical Test of Sulfonamide Compound "Gantrisin"; Experiences in Urology. S. Raabe.—p. 282.

Sulfisoxazole in Urology.—In 88 of 110 patients with various urologic disturbances treated with sulfisoxazole (gantrisin®) the in vivo effect of the drug on the bacterial flora was examined before and after the treatment. Escherichia coli disappeared completely from the bladder urine within five days in 22 patients, while in 8 additional patients considerable improvement resulted from the first course of treatment, followed by complete disappearance of the colon bacilli after a second course with sulfisoxazole. Three patients, two with a Staphylococcus infection and one with a Streptococcus infection, became completely free of bacteria within five days. The remaining 55 patients had mixed infections due to E. coli, Proteus, enterococci, staphylococci, and streptococci. Sulfisoxazole was most effective in infections due to E. coli and Proteus and somewhat less effective in infections due to staphylococci and streptococci. In seven patients new bacteria, such a Pseudomonas aeruginosa and enterococci, appeared in the course of the treatment with sulfisoxazole. Both these types of bacteria are of minor pathological importance for the urinary organs. Because of its specific effect on coli bacteria and Proteus, which participate in the great majority of infections of the urinary passages, sulfisoxazole is to be considered the drug of choice in urology. Its clinical advantages consist of particularly good tolerance, the absence of toxic side-effects, the absence of crystalluria even without simultaneous alkali supply, and the absence of any damage to the renal parenchyma. Determination of the urease activity of the bacteria proved that sulfisoxazole may exert a better effect on the urease-forming microorganisms than that exerted by other sulfonamides. Roentgenologic examination and renal function tests in patients with infections of the kidney and its pelvis showed that morphological and functional conditions were rapidly restored to normal by the sulfisoxazole therapy. Cystoscopic examination showed the highly satisfactory effect of sulfisoxazole on most severe inflammations of the urinary bladder associated with destruction of mucous membranes. General treatment with sulfisoxazole given orally, intravenously, or intramuscularly should be attempted. The following course of treatment proved effective: 15 tablets (7.5 gm.) in four divided doses on the first day, 12 tablets (6 gm.) daily on the second, third, and fourth day, and 9 tablets (4.5 gm.) on the fifth day. Local irrigation treatment alone or in addition to general treatment may be required in cases with impaired kidney function causing unsatisfactory concentration of the drug in the urinary passages. Complete disappearance of bacteria may not be expected following a single course of treatment with sulfisoxazole in the presence of extensive necrotic defects after surgical or intravesical electrical intervention, always associated with mixed infections. Repeated courses of treatment will accelerate the cleansing of the wound, epithelization of the defects, and sterilization of the urine. Combined treatment with sulfisoxazole and penicillin, streptomycin, or aureomycin is recommended in mixed infections with enterococci and Pseudomonas aeruginosa.

Edinburgh Medical Journal

59:1-64 (Jan.) 1952

Hormones of Adrenal Cortex in Clinical Medicine. E. C. Kendall.—p. 1.
Peripheral Nerve Injuries. A. J. Slessor.—p. 13.
Carcinoma of Pancreas. A. W. Branwood.—p. 28.
Serum Vitamin A and Carotene Levels in Normal Adults. K. D. Lahiri and F. J. Scandrett.—p. 39.
Eosinophilic Respiratory Syndrome. E. Soysa.—p. 45.
History of Human Cancer. M. Copisarow.—p. 49.

Lancet, London

1:377-428 (Feb. 23) 1952

Geriatric Problem in Mental Hospitals. L. C. Cook, E. C. Dax and W. S. Maclay.—p. 377.
Subacute Thyroiditis. R. Fraser and R. J. Harrison. —p. 382.
Mumps Meningo-Encephalitis: Outbreak in Preparatory School. W. Henderson. —p. 386.
*Agglutination Test for Rheumatoid Arthritis. D. Hobson and R. H. Gorrill.—p. 389.
*Differential Sheep-Cell Agglutination Test in Rheumatoid Arthritis. F. E. T. Scott.—p. 392.
Antenatal Prediction of Haemolytic Disease of Newborn. D. C. A. Bevis. —p. 395.
Tension Pneumothorax Following Tracheotomy. J. F. Dark.—p. 398.
Allopregnane-3β: 20β-Diol as Standard for Determination of Urinary Pregnanediol. R. M. Haslam and W. Klyne.—p. 399.

Agglutination Test for Rheumatoid Arthritis.—The serum of patients with rheumatoid arthritis shows agglutinins against sheep red cells partially sensitized with rabbit antibody. While similar agglutinins are present in low titer in normal serum, Rose and his colleagues believed that the titers in rheumatoid arthritis were raised sufficiently to differentiate the disease from other conditions. Gorrill and Hobson found recently that the mechanism of agglutination of sensitized red cells by normal sera of several species was associated with the heat-stable fourth component of complement (C′ 4). In this study they attempted to determine if an elevation of titer of this normal agglutinating factor could explain the augmented reaction, which is apparently specific for rheumatoid arthritis. The lytic activity of complement was inactivated by heating at 56 C for 20 minutes. Heterophil antibody was removed by two absorptions with an equal volume of packed sheep red cells at 0 C for one hour. In every case portions of the prepared serum were treated to make it possible to study the relationship of the agglutinating factor and the heat-stable complement components (C′ 3 and C′ 4). It was found that serums of patients with rheumatoid arthritis contain increased amounts of a heat-stable factor that potentiates agglutination of partly sensitized red cells. This factor is very closely associated in its behavior and properties with the heat-stable fourth component of complement (C′ 4). Inferential evidence of this association is presented. The lytic titer of C′ 4 in rheumatoid arthritis tends to be raised above normal levels in patients with increased agglutinating titers. The reaction is highly specific for rheumatoid arthritis and is positive in most cases of moderate severity.

Differential Sheep Cell Agglutination Test in Rheumatoid Arthritis.—Scott says that Rose's differential agglutination test has been used at the Canadian Red Cross Memorial Hospitals for about two years. He also mentions a modification of this test described by Heller, which, however, seems far less specific for rheumatoid arthritis, since an appreciable number of serums from patients with different diseases, with or without arthritis, gave positive results, as did a number of normal controls. It was therefore not considered advisable to use the modified test in place of the agglutination test in the differential diagnosis of arthritis. On the basis of the results obtained in more than 700 tests it is concluded that estimation of the differential agglutination titer, as used by Rose and his co-workers has a definite place in the differential diagnosis of arthritis. A strongly positive result is almost pathognomonic of rheumatoid arthritis, if disseminated lupus erythematosus and hepatitis are excluded. A negative test, on the other hand, has no excluding value, since about 40% of patients with known rheumatoid arthritis gave negative results.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

96:245-308 (Feb. 2) 1952. **Partial Index**

*Tietze's Disease. W. H. D. de Haas.—p. 254.
Diverticula of Jejunum and Ileum (Except That of Meckel). T. Meuwissen and B. Oldenziel.—p. 257.
Epilepsy and Left-Handedness. W. Hordijk.—p. 263.

Tietze's Disease.—Eight patients with Tietze's disease (painful swelling of costal cartilages) were observed by de Haas in 18 months at a clinic for rheumatic diseases in Amsterdam. The histories of two patients in whom a tumor was suspected are given. The first one had, in addition to a mild scapulohumeral periarthritis, a spool-shaped, smooth swelling on the second rib on the left side, which was painful. Roentgenoscopy revealed considerable calcification of the rib cartilage. Tumor could be ruled out on the basis of a biopsy, and syphilis, tuberculosis, and other diseases were excluded in this and other cases on the basis of laboratory tests. However, slight eosinophilia was found regularly. The uric acid and cholesterol content of the blood were either at the upper level of normal or increased. The author suggests that spraining of the costochondral connections possibly combined with a predisposition to arthritis might play a part in the pathogenesis of the painful swelling of the costal cartilages.

Nordisk Medicin, Stockholm

47:1-42 (Jan. 4) 1952. **Partial Index**

Corticotropin (ACTH) and Cortisone: Dosage, Administration and Risks in Treatment of Non-Endocrine Diseases. K. Berglund.—p. 3.
Phenylcinchoninic Acid (HPC) Treatment in Diabetes Insipidus and Acute Arthritis. S. Helander.—p. 10.
*Treatment of Ulcerative Colitis in Children: Attempt to Combine Psychotherapy Sedatives, Enzyme-Binding Drugs and Antibiotics. L. Bastman-Heiskanen.—p. 13.
Renal Function of Fetus. O. Kinnunen and A. Paalanen.—p. 19.
Bilateral Rupture of Tympanic Drum Due to Stroke of Lightning. K. Zilstorff-Pedersen.—p. 22.

Treatment of Ulcerative Colitis in Children.—Bastman-Heiskanen says that ulcerative colitis may be regarded as a "psychic-neuro-enzymatic-infectious" complex in which now one, now another, component dominates the picture. Psychiatric examination with a view to possible psychotherapy should precede somatic treatment. In the acute phase, when bacterial activity seems to predominate, chloramphenicol is effective; in the more chronic cases, in which irritation in the vegetative system seems to be most conspicuous, administration of belladonna and phenobarbital gives good results. Surgical treatment of ulcerative colitis in children is not advised. Six cases of ulcerative colitis of from two months' to eight years' duration in children aged from 5 to 15 years are reported. In three cases there were more or less marked conflict situations in the home. In one case use of belladonna and phenobarbital resulted in noticeable improvement; in four out of five patients treated with chloramphenicol, partly alone, partly in combination with belladonna and phenobarbital, the results were good. Lysozyme determination in the feces, made in three of the cases, showed greatly increased lysozyme values; clinical improvement began with treatment with lauryl sulphate in one case, but no significant reduction in the lysozyme content was demonstrable. Early improvement occurred in a case in which ileostomy was done, but it was succeeded by spread of the ulcerative process to the ileum and fatal outcome. Attention is called to the periodicity of the disorder and the tendency to spontaneous recovery, believed to be especially marked during puberty.

Riforma Medica, Naples

66:29-56 (Jan. 12) 1952

"Dolichomegaesophagus" Aggravated by Stenosis of Medium Portion of Esophagus. E. Ruggieri.—p. 29.
*Sporadic Hemophilia: Two Cases. M. Sposito and P. Marrazza.—p. 34.
Pulmonary Cyst Caused by Echinococcus and Associated with Bilateral Tuberculosis: Rare Case. E. Ciamillo and S. Cattini.—p. 37.

Sporadic Hemophilia.—According to the authors, "clinically" sporadic hemophilia is present in persons of hemophilic families, while "biologically" sporadic hemophilia is present in persons of nonhemophilic families and is due to a change in the sexual chromosomes. Since the characteristic anomalies of clotting time of carriers of hereditary hemophilia may be found in mothers of patients with the first type of sporadic hemophilia and are not found in mothers of patients with the second type, estimation of clotting time and of prothrombin utilization is important in the identification of either type of sporadic hemophilia. The authors report on two boys, aged 10 and 4, respectively, in whom excessive bleeding of the gums occurred repeatedly, and the clotting time of whole blood and recalcified plasma was greatly delayed. Prothrombin activity and the amount of fibrinogen in the plasma being normal, a thromboplastin hypoactivity was assumed to be present. In clotting time tests, 0.5 cc. of blood and 0.1 cc. of plasma of the patients did not influence the clotting time of 1.5 cc. of blood and 0.3 cc. of plasma of normal persons. On the contrary, 0.5 cc. of blood and 0.1 cc. of plasma of healthy persons brought to normal the clotting time of 1.5 cc. of blood and 0.3 cc. of plasma of the two patients. This suggested that the patients' blood lacked a coagulative factor. In additional tests, minimum quantities of blood and plasma of patients with essential thrombocytopenic purpura brought to normal the clotting time of the blood of the two patients. The amount of prothrombin utilized was considerably diminished in the blood of each patient taken separately, but was normal during cross coagulation. The results indicated that the plasmatic factor that was lacking in the authors' two patients was present in the patient with essential thrombocytopenic purpura. Since in these patients the number of blood platelets is diminished, the plasmatic factor must be represented by the antihemophilic globulins. Thus, the two patients' tendency to excessive bleeding was caused by lack of antihemophilic globulins. Because there was no familial history of hemophilia, the clotting time was normal in their lineal and collateral relations, and prothrombin utilization during clotting time was normal in the patients' mothers, the diagnosis was biologically sporadic hemophilia.

Semaine des Hôpitaux de Paris

28:203-240 (Jan. 22) 1952

*Angiocholography and Effects of Posture; Pseudospasm of Oddi's Sphincter; So-Called Contraction of Hepatic Canal; Usefulness of Radiomanometric Studies; in Procumbent, Trendelenburg, and Standing Position. J. Ranty, J. Paulhiac and J. Caroli.—p. 203.

Undesirable Renal Effects Due to Blood Transfusions. I. General Review. R. André, B. Dreyfus and N. Taleb.—p. 214.

Angiocholography and Effects of Posture.—The effects of posture on the biliary ducts were studied in roentgenograms made under controlled pressure (biliary radiomanometric studies) in 14 patients. Routine frontal roentgenograms of the biliary ducts taken with the patient in dorsal recumbent position may lead to an erroneous interpretation that will be corrected on the basis of lateral (profile) roentgenograms taken with the patient in the prone, Trendelenburg, and, when possible, in standing position. Even the roentgenograms taken under manometric control may be interpreted more precisely if the patient's position has been varied in these ways. The principal conclusions reached were as follows: The reflux within the hepatic ducts with the patient in recumbent position does not by itself produce sufficient evidence of spasm of Oddi's sphincter; it may be due to a sloping position of the upper biliary ducts with respect to the choledochoduodenal orifice. In addition it has been possible to demonstrate that sphincteral action at the level of the bile duct is related to a superpancreatic angulation of the bile duct in the anteroposterior plane, which is more pronounced as the bile duct is dilated.

28:371-416 (Feb. 6) 1952

Study of Various Wetting Agents; Their Use in Gastroenterology. C. Debray and M. Méhaut.—p. 371.

Classification of Hemorrhagic Diseases. A. Baserga.—p. 377.

*Treatment of Hemophilia by Plasma Injections. P. Cazal and P. Izarn.—p. 380.

Nervous Forms of Infectious Mononucleosis. P. Kissel, G. Arnould and P. Leval.—p. 387.

Treatment of Hemophilia by Plasma Injections.—The hemostatic value of a clot depends on the quantity of thrombin formed during the clotting process rather than on clotting time. Clot structure in hemophilia is characterized by loose meshes and fragile fibrin filaments; after injection of frozen plasma, the clot appears normal, with numerous centers of coagulation, thick fibrin filaments, and compact meshes. Comparatively large quantities of plasma are needed to secure a normal serum prothrombin level; repeated injections are cumulative in their effect, so that a normal serum prothrombin level can be maintained in a hemophilic person for several days. Serum prothrombin, however, returns to its initial level within 24 hours after a single plasma injection; the effect of plasma on clotting time is more lasting, continuing for about 48 hours. Frozen plasma injections are simple and efficacious and may be given instead of whole blood transfusions whenever the antihemophilic factor alone is needed, that is, when hemorrhage is not accompanied by hypovolemia or pronounced anemia. They may also be used prophylactically when the clotting time falls below a safe level. Difficulties due to lability of the antihemophilic factor may be avoided by preparation and freezing of the plasma within three hours after the blood is obtained. Thawing should be rapid but not abrupt. Plasma may be given drop by drop at the rate of 100 cc. every 15 minutes. Its hemostatic action is as spectacular as that of whole blood; hemorrhages are arrested, and dental operations can be carried out under the protection of daily plasma injections.

Tuberkulosearzt, Stuttgart

6:1-64 (Jan.) 1952. Partial Index

Is It Justified to Caution Against Use of Pneumoperitoneum? H. Böhme.—p. 3.

*In Vivo and in Vitro Resistance of Tubercle Bacilli to Streptomycin, Para-Aminosalicylic Acid and Amithiozone. P. Hofmann and L. Nickel.—p. 7.

Effect of Oxygen Inhalation on Spirogram and Analysis of Blood Gas in Chronic Hypoxemia. J. Maurath.—p. 15.

Drug Resistance of Tubercle Bacilli.—Experience with streptomycin therapy of tuberculosis showed that treatment with larger doses of the drug should not be continued for longer than 8 to 10 days to prevent with certainty the development of streptomycin resistance. The development of streptomycin resistance may be delayed by repeated short courses of treatment at intervals of several weeks, but the authors are convinced that after a certain period of effective intermittent treatment resistance develops as with continued treatment. The development of resistance could be delayed also by use of daily doses of 0.1 gm. or two of three weekly doses of 0.5 to 1 gm., and significant clinical improvement was obtained in severe cases. A good initial effect was obtained with *p*-aminosalicylic acid in most patients, but after two to three months of treatment the effect of the drug diminished or was completely absent. Susceptibility to a concentration of less than 0.2 μg of *p*-aminosalicylic acid per cubic centimeter was observed in 85% of the strains before treatment was instituted. Resistance to *p*-aminosalicylic acid in a concentration below 1 μg was observed in only a few strains. Retesting after 20 to 40 days of treatment revealed that 1 of 10 strains already had developed resistance to more than 10 μg. After 40 to 60 days of treatment 2 strains were resistant, after three months of treatment 3 of 10 strains were resistant, and after four and more months of treatment, 4 of 10 strains were resistant and 2 additional strains were susceptible only to a concentration of more than 2 μg. Resistance to a concentration of more than 10 μg per cubic centimeter in vitro is in general tantamount to clinical resistance. A test of resistance should be carried out after four months of treatment at the latest, and treatment should be continued only when the test shows a favorable susceptibility, at least to a concentration below 10 μg per cubic centimeter. Treatment with *p*-aminosalicylic acid should be continued only for four to six weeks without interruption, and should then be followed by a rest interval of at least one month. By this procedure development of resistance was considerably delayed and at least a partial success of the treatment could be relied on. Resistance to *p*-aminosalicylic acid develops during treatment, but only after a period twice as long as that required for streptomycin resistance. Primary resistance against amithiozone (conteben®) may be expected in 15% of the patients, and precludes a favorable prognosis. Improvement was obtained with amithiozone in most severe cases in the absence of primary resistance to the drug. Susceptibility experiments in vitro with amithiozone, and susceptibility tests on patients treated with amithiozone for 4 to 21 months seemed to prove this experience in vivo. The success of amithiozone therapy is directly related to the primary susceptibility of the tubercle bacilli to this drug.

BOOK REVIEWS

Diagnostic Bacteriology: A Textbook for the Isolation and Identification of Pathogenic Bacteria. By Isabelle Gilbert Schaub, A.B., Technical Director, Clinical Bacteriology Laboratories, Johns Hopkins Hospital, Baltimore, and M. Kathleen Foley, M.A., Instructor in Bacteriology, Department of Biological Sciences, College of Notre Dame of Maryland, Baltimore. Fourth edition. Cloth. $4.50. Pp. 356. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1952.

The authors have done an excellent job of condensing a great deal of extremely valuable information into a small book. For this reason, this book will be found in use as a working manual as well as a reference text. The latest developments in diagnostic bacteriology have been included so as to present a working manual of modern bacteriology. New methods of differentiation and identification are well presented in a clear-cut fashion. New media are described and the procedures for biochemical identification have been rewritten and streamlined. The inclusion of a section on determinations of sensitivity of bacteria to antibiotics is of great value. This is a well-planned and improved edition of an already good manual. The excellent readability, organization, and subject material makes this text a worthy adjunct for teaching, reference, or clinical bacteriology. The authors have been able to concentrate much reliable and useful information in a few words.

Understanding Children's Play. By Ruth E. Hartley, Lawrence K. Frank and Robert M. Goldenson. Cloth. $3.50. Pp. 372, with illustrations. Columbia University Press, 2960 Broadway, New York 27, 1952.

Detailed reports on reactions of individual children to various play situations comprise a large part of this volume, which is primarily intended as a guide for nursery, play, and elementary and kindergarten school teachers; it also serves the purpose of acquainting directors and teachers with the full potentialities of toys, games, and creative materials for stimulation of healthy child growth. Following an introductory chapter on the function of play in child development, there is a discussion of dramatic play as a mirror of the child and as an instrument for growth. There are other chapters on play with blocks, water-play, use of clay, graphic materials, finger painting, and music and movement. In each chapter, there is an interpretation of the case histories; this feature should be of value to the groups mentioned above. An appendix contains detailed directions on how observers should conduct themselves in their relationships with teachers and children as well as six suggestions on recording observations. This is followed by a more detailed discussion of recording procedures, illustrated by detailed examples. Another section deals with training classroom teachers to observe children at play. With each chapter, there are reference notes and a bibliography. This volume should be of value in any teacher training program, if for no other reason than to familiarize the candidates with this aspect of child study.

Les syndromes douloureux de la région épigastrique. Tomes I et II. Par René A. Gutmann. Bibliothèque des grands syndromes; directeur: H. Roger; secrétaires: R. A. Gutmann et R. Porak. Fifth edition. Paper. Pp. 820; 859, with 689 illustrations. Gaston Doin & Cie, 8 place de l'Odéon, Paris, 6^{e}, 1951; 1952.

Painful syndromes of the epigastric region are difficult to write about, since they may be associated with a multitude of causes. It is not unusual, therefore, that two huge tomes of over 800 pages each were required to properly cover the material that these authors discussed. Discussion is detailed. The first 90 pages are devoted to an over-all discussion of the clinical forms associated with epigastric pain and the ulcer syndrome. Duodenal ulcer is discussed in great detail. Diagnostic and roentgenographic data on usual and unusual types of duodenal ulcers are also given. Chapter 3, which deals with postbulbar ulcer, is particularly well written. Chapter 8 deals with treatment of the ulcer syndrome. It is well written, but the tremendous number of conflicting regimens mentioned might leave the reader confused. The indications for surgery are succinctly stated. The existence of such syndromes as "enterovesicle" and "enterohepatic" is still open to question. The section that deals with biliary dyskinesia is probably one of the best in the book. The importance of avitaminoses as it effects the digestive tract is presented in a scholarly way and is timely. This exhaustive work can be recommended to anyone interested in detailed discussions regarding painful syndromes of the epigastric region. A thorough reading knowledge in French would be a prerequisite.

Pathological Histology. By Robertson F. Ogilvie, M.D., D.Sc., F.R.C.P.Ed. Foreword by A. Murray Drennan, M.D., F.R.C.P.Ed., F.R.S.E., Professor of Pathology, University of Edinburgh, Edinburgh, Scotland. Fourth edition. Cloth. $8. Pp. 506, with 295 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; [E. & S Livingstone, 16 and 17 Teviot Pl., Edinburgh 1], 1951.

This book was not designed to replace but to supplement a standard textbook of pathology. In it, representative features of pathological lesions are reproduced by means of color photomicrographs. The color reproduction is excellent, and the types of lesions shown are well selected. The objective is to enable the student to see photomicrographs that are characteristic of the lesions that are being studied under the microscope. In the text, pathological processes are described, macroscopically and microscopically. An attempt is made to deal with phenomena of both general and special pathology. Obviously, the many variants of pathological processes cannot be included in a book of this limited scope. Nonetheless, for medical students and for physicians who wish to review pathology, this book provides sound guidance in histopathology. It does not profess to do more.

Body Dynamics. By Eleanor Metheny, Ph.D., Professor of Education and Physical Education, University of Southern California, Los Angeles. Cloth. $3.50. Pp. 225, with 55 illustrations. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18; Aldwych House, Aldwych, London, W.C.2, 1952.

Essentially a book on body mechanics, the title of this small volume indicates its emphasis on the dynamic approach to the problems involved. It suggests ways of using the body effectively and methods of maintaining fitness in simple nontechnical language and in a style that the general reader will find interesting and understandable. Following a preview of basic structure, consideration is given to the uses of exercise and relaxation in daily life and then to the conservation of energy through efficient posture in various kinds of activities. A series of exercises for preventive purposes is included, but no incursion into the field of physical medicine is suggested. While the point of view and a majority of the illustrations are of a type that may be a bit closer to the concerns of feminine readers, there is much in the volume that will appeal to persons of both sexes with an interest in posture and body mechanics.

A Manual of Parasitology for Medical Students and Beginners. By Mark M. Schapiro, M.D., M.S., Consultant in Tropical Medicine and Parasitology, American Hospital, Chicago. Foreword by Sir Philip Manson-Bahr. Cloth. $5.50. Pp. 140, with 9 plates. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1951.

This book is designed for the use of medical students and beginners in the field of parasitology. There has been an obvious attempt to exclude controversial topics, and the text is confined almost exclusively to diagnosis. In such a large field as parasitology, it is exceedingly difficult to produce a worth-while, condensed form. More colored plates would be desirable. All the illustrations are excellently reproduced, but, since there are no photographs, it will probably leave the beginner with a feeling of frustration because of his difficulty in detecting comparable

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The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

forms. As a whole, the manual is satisfactorily written; the format is good; and the paper and binding are excellent. It will probably enjoy some popularity but only as an addition to a more comprehensive text.

Ruptures of the Rotator Cuff. By H. F. Moseley, M.A., D.M., M.Ch., Assistant Professor of Surgery, McGill University, Montreal. Publication number 106, American Lecture Series, monograph in American Lectures in Surgery, edited by Michael E. DeBakey, M.D., Professor of Surgery, Baylor University College of Medicine, Houston, Tex., and R. Glen Spurling, M.D., Clinical Professor of Surgery, University of Louisville, Louisville, Ky. Orthopedic Surgery Division, editor: Robert Kelly, M.D., Associate Professor of Surgery, Emory University, Ga. Cloth. $6.50. Pp. 90, with illustrations by Helen MacArthur. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, 1952.

Professor Moseley is one of the most noted of the living British surgeons. He has been Hunterian professor of the Royal College of Surgeons of England, assistant professor of surgery, McGill University, and associate surgeon, Royal Victoria Hospital, Montreal, Quebec, Canada. Professor Moseley is eminently qualified by training, experience, and an intense interest in the subject to write this book.

As stated in the preface, an attempt is made in this book to formulate objective methods for the evaluation of shoulder function that will assist in the critical analysis of the various forms of treatment. Besides the frontispiece, there are 13 beautifully prepared full page color plates that illustrate various injuries to the rotator cuff and methods of surgical repair. In the introduction, the author gives credit to the late Dr. Codman for his studies of injuries of the shoulder. Whereas Codman's book was characterized by the infinite detail with which he described each lesion and injury as well as the anatomy, physiology, and function of the shoulder, the text in Moseley's small book is brief. The concise text is made adequate by anatomic drawings, and, together, they give a clear picture of the anatomy and pathology of the various injuries and the recommended techniques of surgical repair. An excellent bibliography is appended. Although the text is short, it would be difficult to discover any important omissions. This small book is recommended to all students of orthopedic surgery and to all physicians who are interested in anatomy, orthopedic physiology, or the treatment of injuries to the bones and joints.

Blood Clotting and Allied Problems: Transactions of the Fourth Conference January 22-23, 1951, New York, N. Y. Edited by Joseph E. Flynn. Cloth. $4. Pp. 272, with 81 illustrations. Josiah Macy, Jr. Foundation, 565 Park Ave., New York 21, 1951.

This volume, the fourth in a series that reports verbatim the discussions of the Annual Conference on Blood Clotting and Allied Problems, maintains the high standard set by its predecessors. The fourth conference, held in 1951, is notable for its expanded panel of participants, since 8 guests, including the eminent British "coagulationist," Helen Payling Wright of University College Hospital Medical School, London, joined the 17 authorities who are members of the conferences.

As in previous conferences, the discussions are informal in nature and broad in scope. The subject matter is based upon seven major presentations, whose titles and authors indicate the scope and authority of the program: Methods for Direct Investigation of Factors Leading to Thrombosis, Knisely; Studies on Canine Hemophilia, Brinkhous; Characteristics of Blood Platelets: Their Significance in Thrombus Formation, Helen Payling Wright; Morphological and Physiological Studies of Platelets and Hemostasis, Zucker; Antithrombin—Alpha Tocopherol, Seegers; The Transition of Fibrinogen to Fibrin, Laki; and Polaroscopic Studies of the Fibrinogen—Fibrin Reaction, Jaques.

Two topics are of particularly timely interest. Knisely's discussion is confined largely to the description of his most recent experimental work on "sludged blood" and to the elucidation of his views on this provocative phenomenon. Seegers reports his observations on alpha tocopherol as an antithrombin, and in the discussion John H. Kay of Tulane describes experiences with alpha tocopherol both as an index of the thrombosing tendency and as a method for preventing thromboembolism. The critical discussion of the claims advanced by the progenitors of these phenomena are of practical interest to clinicians as well as to those concerned with the experimental approach to intravascular clotting.

The inclusion in this conference of several topics related to the morphological consideration of intravascular clotting is of interest in the light of the preoccupation during recent years with the physicochemical aspects of blood clotting. Although the earliest descriptions of intravascular clotting were based upon purely morphological observations, there has been little or no advance in this direction during the past two decades. The discussions of "sludged blood" and of the role of the blood platelets in thrombus formation indicate a renewed interest in the morphology of the intravascular blood clot.

The published accounts of these conferences are intended primarily for the expert in the particular field and especially for the investigator; however, any physician who has more than a casual interest in intravascular clotting should be thoroughly conversant with the subject matter that appears in these volumes year by year.

Progress in Allergy. III. Edited by Paul Kallós. *Contributors: J. F. Ackroyd, and others. Cloth. 68.65 Swiss francs $16.25. Pp. 572, with 82 illustrations.* S. Karger, Holbeinstrasse 22, Basel; Interscience Publishers, Inc., 250 Fifth Ave., New York 1, 1952.

This book, like its predecessors, is essentially a large periodical between hard covers. Its contents are so varied, both in subject matter and in quality, that evaluation is possible only piecemeal.

The chapters of clinical interest are written for the general practitioner rather than the specialist. These consist of "Allergy in Children" by M. M. Peshkin, "Bronchial Asthma" by L. Unger, "Bronchial Asthma Due to Food Allergy" by A. H. Rowe, and "The Infective Factor in Asthma and Rhinitis" by D. Harley. The repetitiousness of much of the material relating to testing technique and to respiratory allergy in each of these chapters indicates the looseness of editorial control. More serious are the number of inaccuracies in the second of the four articles noted above, an example of which is the author's emphasis on the importance of orris root in cosmetics and his recommendation of hyposensitization for those who are sensitive to orris root. For many years this material has seldom or rarely been used commercially in cosmetics.

The remaining chapters are of interest primarily to the specialist who is experimentally minded and trained in pharmacology and chemistry. A chapter in German, the only one not in English, by F. Wyss and W. Hadorn, describes the use of an instrument for measuring bronchial resistance. Cardiovascular allergy is thoroughly covered by J. Harkavy. Ergot and its derivatives are extensively discussed from the historical and chemical point of view by A. Stoll, its pharmacology and its effects on the autonomic nervous system by E. Rothlin and R. Bircher, and its application in migraine by P. Kallós and R. Kallos-Deffner. A detailed review of drug allergy is furnished by E. A. Brown, and finally, a careful immunologic study of three patients with purpura due to sedormid® (allyl-isopropyl-acetyl-carbamide) closes the volume. In each of these chapters the bibliography is extensive.

Three of the contributors are from England, four from Switzerland, two from Sweden, and five from the United States. One could wish for some evidence of cooperation among the authors and stronger editorial supervision, which might have resulted in a more unified work for both the general practitioner and the specialist.

German-English Medical Dictionary. By Louis De Vries, Professor of Modern Languages, Iowa State College, Ames. Cloth. $12. Pp. 586. McGraw-Hill Book Company, Inc., 330 W. 42d St., New York 36; Aldwych House, Aldwych, London, W.C.2, 1952.

A new German-English medical dictionary, containing 4,000 German medical terms with their English equivalents, has been compiled by the author with the aid of 16 medical collaborators. The dictionary is oriented toward those whose German background is at college level. The author does not claim completeness; however, terms in all specialized fields of medicine, including psychiatry, are included to make this dictionary a good reference tool for physicians and other workers in the medical field.

QUERIES AND MINOR NOTES

DARK CIRCLES UNDER THE EYES

To the Editor:—*Is there any logical explanation for persistent dark circles under the eyes? In my patient, the general physical examination and routine laboratory studies have been essentially normal. Menstruation accentuates the condition, but the pigment remains prominent at all times.*

M.D., Maryland.

This inquiry was referred to three consultants, whose respective replies follow.—Ed.

Answer.—Persistent dark circles under the eyes, a condition of apparent discoloration of the eyelids, particularly the lower lids, is dependent on a combination of anatomic conditions: namely, the thin skin of the lids, the absence of fatty subcutaneous tissue, and the numerous large veins of the palpebral circuit. The dark circles are due to the anatomic arrangement of the relatively large venous blood spaces near the skin. A condition such as menstruation will cause a temporary passive congestion of the blood vessels and will accentuate the discoloration.

When the venous passages are dilated there is seen through the skin an intensified bluish discoloration. The absence of fat, which if present would tend to bury the veins deeper and thus diminish the bluish color showing through the skin, enhances the apparent discoloration of the lids.

The discoloration has no bearing on normalcy or abnormalcy of blood studies or physical disorders, except that in chronically ill or, in some instances, acutely ill persons, where there has been a lack of proper amount of sleep and rest the apparent discoloration will increase and involve the upper lids as well. The dark circles of the lids have no clinical significance.

Answer.—The dark circles under the eyes are due to underlying veins showing through a thin skin. They become accentuated with fatigue, presumably because of pallor of the face. Persistent dark circles do not appear to have any clinical significance.

Answer.—It is difficult to locate any concrete study pertaining to this subject, and this reply should not be considered definitive. The presence of dark circles under the eyes, usually dark brownish and sometimes bluish, is not in itself indicative of physical disease, being oftenest seen in healthy, normal persons and representing merely a pigmentation anomaly, probably of individual genotypic character. The pigment involved is presumably melanin. It would be difficult to believe that there is any cyclical quantitative variation in such a pigment deposit in relation to menstruation, nor can one find any reliable authentication of such a view among gynecologists. It seems more likely that the common lay belief of "dark circles under the eyes" in association with fatigue and suffering is explainable by the contrast of such pigmented areas with a pale and wan countenance.

SKIN TEST FOR PREGNANCY

To the Editor:—*What are the merits of the colostrum skin test for pregnancy, simplified by the use of the Ogle Micro Dispenser?*

Clenton H. Whitehurst, M.D., Auburndale, Fla.

Answer.—The colostrum skin test for pregnancy was developed in 1940. The original investigators made a preliminary report claiming about 95% correct results of known positives, known negatives, and unknowns in about 500 tested cases. The antigen used was whole colostrum diluted 1 to 20 and kept at ice box temperature. Other reports from various clinics were soon published, some of which confirmed and others denied the specificity of the reaction. The antigen, prepared by a commercial company, was used in many of these tests in capillary tubes; it was difficult to aspirate it into a tuberculin syringe and to deliver the exact 1 cc. advised in the test. For these reasons and because it was difficult to make a sharp distinction between a positive and negative result the test was largely abandoned.

Recently a new device for accurately dispensing the exact amount of colostrum at a standard depth in the skin has been developed. Enthusiastic claims have again been made for its accuracy. Sufficient careful work has not been done by investigators to prove or disprove these claims. It would be better to await further confirmation of the value of the test before applying it in a case in which an important decision as to the management of the case depends on the correct diagnosis.

TOXICITY OF CUTTING OILS

To the Editor:—*A woman has a dermatitis resulting from contact with an oil used in a local industry. She also complains of weakness, loss of weight, her food tasting flat, and numbness in the hands, since the advent of the dermatitis. The cutting oil has the following components: petroleum oil, combined sulfur, and sulfurized lard oil. There is no active sulfur and a percentage of combined sulfur of 0.4%. Its viscosity is 120 at 100 F. (37.8 C). Some of the oil contains 40% lard oil, which I believe is sulfurized, no chlorine, and naphthenic 120. Is it possible for oil of this type to cause the systemic symptoms described? Can oil with combined sulfur cause poisoning?*

David Kaplan, M.D., Elmira, N. Y.

Answer.—There are no reports of systemic toxicity from exposure to cutting oils having the composition given. It is possible that the heat generated by the cutting operation may liberate sulfur dioxide and hydrogen sulfide, but the symptoms of toxicity from these sulfur compounds do not correspond to those of this patient. Some cutting oils contain carbon tetrachloride or solid chlorinated hydrocarbons. Systemic poisoning is possible from exposure to such oils, but the symptoms are not those of this patient. Chloracne is caused by cutting oils containing solid chlorinated hydrocarbons, but from the description this patient has dermatitis and not chloracne. The sensory disturbances suggest exposure to heavy metals.

REFERENCE:

Patty, F. A., Industrial Hygiene and Toxicology, Brooklyn, Interscience Publishers, Inc., pp. 583-586.

FLUID IN THE CUL-DE-SAC

To the Editor:—*While operating on the pelvic organs, I frequently find varying amounts of straw-colored fluid and a yellowish gelatinous material lying free in the posterior cul-de-sac. The smallest amount I saw of this jelly-like mass was about the size of a marble, the largest amount, about the size of a hen's egg. What is the nature of this material and what is its source?*

Alexander A. Levi, M.D., Boston.

Answer.—Small amounts of straw-colored fluid are normally present in the peritoneal cavity and are commonly noted in a dependent location during laparotomy. With this fluid, small masses of pale yellow or yellowish-brown, soft, friable, gelatinous material are frequently found. The exact origin and chemical nature of this material is apparently not recorded in the literature. Since it occurs in both sexes and before and after the menopause, it is not dependent on ovulation. It is thought, however, that the small amount of hemorrhage into the abdominal cavity at the time of ovulation increases the amount or results in the reddish-brown color of the gelatinous material. Many surgeons believe that the fluid and gelatinous material are exudates; nevertheless, factual proof of inflammatory origin is lacking, and it seems probable, because of its commonness, that the fluid is a normal physiological secreti[illegible]d that the gel[illegible]us material is a coagulum of this flu

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The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

INFANT WITH TUBERCULOUS MOTHER

To the Editor:—*A young Negro mother has pulmonary tuberculosis, with a giant cavity and positive sputum. She has been in close contact with her 10-day-old infant, having nursed him since delivery. The child has not been tuberculin tested, since it was believed that it was too early for the child to have developed tuberculin allergy. Would you advocate a course of streptomycin for the child without waiting for his tuberculin test to become positive? If so, what would be the proper dose and duration of therapy?*

Irwin G. Karron, M.D., Bronx, N. Y.

Answer.—The course to pursue depends on what happens to the infant. There is a chance that it did not become infected, in spite of the exposure. There would be no harm in waiting to see if the infant develops symptoms, such as enteritis, bronchitis, laryngitis, pneumonitis, skin manifestations, loss of appetite and weight, or other clinical signs of illness. After 6 weeks, if nothing else appears, a tuberculin test should be performed and, if negative, it should be repeated every 30 days for two more times. Under no circumstances is there occasion for alarm, unless serious clinical symptoms appear or a definite diagnosis can be made. In this event, streptomycin therapy should be instituted, 0.2 gm. daily or 0.3 gm. twice a week, with 250 mg. of *p*-aminosalicylic acid (PAS) four times daily in the feedings. If gastrointestinal symptoms develop from *p*-aminosalicylic acid, the dose can be reduced or suspended for a few days and the treatment begun again with 100 mg. four times a day and later increased to 250 mg. Cultures of laryngeal swabs and chest roentgenograms should be taken at intervals to follow the disease course, which should be controlled within four months. With the foregoing regimen, meningitis should not develop. If meningitis does develop, no change should be made in the treatment, except to double the dose of the drugs. Intrathecal treatment should not be given under the circumstances.

BCG VACCINE

To the Editor:—*One year ago a student nurse exhibited a positive reaction to the Mantoux test. This year her reaction was negative. The hospital in which she is a student demands that she be given BCG vaccine. Is there any danger in giving this vaccine to a person who has previously shown a positive tuberculin reaction?*

Matthew H. Paushter, M.D., Binghamton, N. Y.

Answer.—The question of positive or negative tuberculin reaction of this nurse is still unsettled. The tuberculin test should be repeated. If her reaction is still positive as shown by a test in which a strong dilution of old tuberculin or purified protein derivative of tuberculin is used, no advantage is to be gained by BCG vaccination. If the stronger dilution of tuberculin results in a negative reaction, an error in the first test may be indicated; in this case BCG vaccination is advisable. The vaccine can cause no particular harm to a patient previously infected unless the disease is active. The only unusual result would be a quicker response (within two to six days after inoculation) and, sometimes, a more violent reaction (the Willis-Saye reaction).

GOUT AND OPACITIES IN THE VITREOUS

To the Editor:—*In the "Standard Nomenclature of Diseases" (ed. 3, Chicago, American Medical Association, 1942, p. 549) there is a reference to opacity in the vitreous due to gout. I have been unable to find any information on this subject. Please give me information on the etiology of these opacities. Do they also occur in hyperuricemia?*

M.D., Massachusetts.

Answer.—Gout was frequently implicated as the cause of a number of ocular afflictions in previous years, particularly during the 19th century. With development of accurate methods for determination of blood uric acid (1913), many of the conditions previously attributed to a "gouty diathesis" are now interpreted otherwise. Urate crystals have been found in the cornea and sclera, and episcleritis and conjunctivitis are undoubtedly genuine complications of gout. Wood (Inflammatory Disease in the Eye Caused by Gout, *Brit. J. Ophth.* **20:**510,1936) has reported on the pathological condition of an eye removed because of recurrent inflammation from a woman with an increased uric acid blood level. There were large rounded vitreous opacities and crystals in the cornea and sclera that were not examined chemically. Doggart (Ophthalmic Medicine, Philadelphia, The Blakiston Company, 1949) doubts that there are pathognomonic signs of gout in the fundus. Savin (Remarks on Ophthalmic Gout, *Tr. Ophth. Soc. U. Kingdom* **58:**149, 1938) quotes Graham on this subject: "Any person who has had gout has an excess of uric acid in his blood, in the body fluids, and presumably in the aqueous and vitreous. If an inflammation occurred in the eye or elsewhere due to another cause, uric acid crystals would undoubtedly be deposited." It should be noted, however, that urates do not precipitate readily, even in a supersaturated solution. The possible effects of hyperuricemia are discussed by Bauer and Klemperer in Duncan's "Diseases of Metabolism" (ed. 2, Philadelphia, W. B. Saunders Company, 1947).

FLYING AND HEART DISEASE

To the Editor:—*Should a boy of 17, suffering from rheumatic valvular heart disease with gross findings, blood pressure 160/0, be allowed to fly a ship such as a Piper-Cub? There are no signs of heart failure at present.*

A. Mayer, M.D., Tel Josef, Israel.

Answer.—From the information received, this person is suffering from aortic insufficiency. Since the insufficiency is primarily on the arterial side, there may be (although heart failure is not present) manifestation of occasional fainting, giddiness or mental irritability, and feebleness. On the whole, it is fairly well agreed that the prognosis in aortic insufficiency is the least good of all valvular lesions. It is not uncommon to see sudden death in these persons. The hemodynamics necessary to maintain good cerebral circulation while flying are inconsistent with this lesion. It is, therefore, recommended that this person not be certified for flying, even as an avocation. The possibility of a stall or spin, even in such a ship as a Piper-Cub, could cause circulatory embarrassment in this person, which would make him unsafe in the cockpit to himself, to his passengers, and to other aircraft.

DERMATITIS FROM DIESEL OIL

To the Editor:—*In the Feb. 23, 1952, issue of* The Journal, *an answer to a query on the occurrence of dermatitis in diesel railway shop workers failed to mention chromate sensitivity as a common etiological factor. A solution containing, in part, about 6% sodium bichromate is used as radiator fluid in diesel locomotives. Winston and Walsh* (J. A. M. A. **147:***1133 [Nov. 17] 1951) reported that, over a four year period, chromate sensitivity from contact with this solution accounted for incapacitating dermatitis in at least six railway workers in one diesel railroad shop.*

Calvin J. Dillaha, M.D.
University of Chicago
Chicago 37.

To the Editor:—*The answer to the query regarding allergic dermatitis in persons handling diesel oil* (J. A. M. A. 48:689 *[Feb. 23] 1952) spoke simply of irritation of the skin by oil. It is probable that some of these cases represent chrome dermatitis, as chromates are used in radiator fluid of diesel engines as rust preventatives. There is invariably some leakage of the radiator fuel into the oil and grease of the motors, and, in this way, the workers constantly come in contact with a weak solution of chromate. Eventually, some of them become sensitized.*

I have seen several such cases. I recommend that a patch test be done on some of these persons, with a concentration of 0.5% potassium bichromate to determine chrome sensitization. For treatment of chrome dermatitis, I have been employing 3% dimercaprol (BAL) in zinc oxide ointment or in a base containing 10% each of zinc oxide and starch in equal parts of hydrous wool fat (lanolin) and petrolatum. I have found this effective, as BAL seems to be a specific antidote against chrome.

Harold N. Cole Jr., M.D.
1352 Hanna Building
Cleveland 15.

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HOME CARE OF PATIENTS WITH ACUTE POLIOMYELITIS

Philip M. Stimson, M.D., New York

Until recently poliomyelitis specialists and public health authorities generally advocated prompt hospitalization not only of all patients with early poliomyelitis but also of all patients suspected of having early poliomyelitis. There were, of course, good reasons for this, perhaps the most important being that a mild early case may become a serious one later in which the ultimate outcome may vary materially according to the care received, the best care naturally being obtained only in certain hospitals. Because of the resulting demand for hospital facilities, more and more hospitals have opened their doors to poliomyelitis patients. In some communities nearly 100% of actual poliomyelitis patients are being hospitalized, including many with only trivial infections. From 10 to 30% as many additional patients are hospitalized who are found not to have poliomyelitis. Of late, the pendulum has begun to swing back to home care in selected cases. There are good reasons for this move.

First and foremost among the advantages of home care is the important fact that the patient is saved the fatigue, excitement, and nervous tension of the trip to the hospital and the excessive handling that is usually incident to the first days in a hospital. There is wide agreement today that fatigue and exhaustion at the onset of poliomyelitis seem to aggravate the ravages of the oncoming disease. Furthermore, most parents naturally prefer if possible to keep their sick child home; there is far less emotional disturbance; and, incidentally, the financial costs are far less. By the time the diagnosis is suspected and hospitalization considered, the rest of the family has been exposed and usually infected, and the dangers from further exposure are presumably negligible. Then, relieving hospitals of the necessity for care in trivial cases and suspected cases releases many beds and many nurses for the care of more serious cases. It is particularly important to differentiate poliomyelitis from nonpoliomyelitis infections in the homes rather than to give the burden of differentiation to busy hospitals. A final advantage in the home care of patients with acute poliomyelitis is that the family physician can remain in touch with his patient. He will usually want expert help and advice in the management and care of the patient, but he has the patient's confidence and should best be able to help the patient and especially the patient's family through the first week or 10 days when worry and fear seem inevitable.

It is obvious that great care must be taken in deciding which patients to send at once to a hospital and which to leave quietly at home. To be considered in the selection of cases for treatment at home are three general groups of patients: (1) those with suspected poliomyelitis, including children with so-called "characteristic minor illnesses," especially as they occur in the siblings of patients with identified poliomyelitis; (2) the patients with recognizable acute poliomyelitis without paralysis as yet; and (3) selected patients with some slight weakness, but with no possible threat to life, who live in homes in which proper management is possible.

As to the patients suspected of having poliomyelitis, most practitioners want help in their identification, and many have become accustomed to send such patients to a hospital for diagnosis. Also, many parents have come to expect this. The differentiation between poliomyelitis and a multitude of other conditions can often be made in the home or in a hospital diagnostic outpatient clinic, and, if the family doctor is not to be held liable for possible mistakes, diagnostic consultation must be available to him either in the home or a clinic. Such aid is perhaps not so essential with the other children in a family in which diagnosis has been made in a paralytic case. These siblings usually have some evidence of ill health, such as a sore throat, mild grippe, or a headache that occurs the same week as the onset of the paralytic case. Many of these illnesses are called abortive poliomyelitis. There is no practical way of proving they are instances of poliomyelitis, and probably some such term as a "characteristic minor illness" is better. Certainly these children are best kept quietly in bed at home until they are well rested and again considered fit.

As to the recognizable cases of acute poliomyelitis without paralysis, the diagnosis is made possible by a history of sore throat, elevation of temperature, headache, backache, and perhaps vomiting and constipation, and by the finding on physical examination of some stiffness or tightness in the muscles of the neck, back, thighs, and calves, of tenderness in the muscles, of reflexes that

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From the New York Hospital-Cornell Medical Center, Department of Pediatrics.
Read before the Areal Meeting, American Academy of Pediatrics, May 23, 1952, Washington, D. C.

are irregular and tend to disappear, and perhaps of tremors and muscle twitchings. In such a situation many physicians, and indeed many parents today, believe an examination of the spinal fluid is imperative, and patients are rushed off to a hospital so that a lumbar puncture can be done. In many cases such a step is not necessarily essential. When the presence of poliomyelitis is suspected, the greatest value of an examination of the spinal fluid is to rule out the existence of meningitis, but this elimination can often be done on clinical evidence alone. The finding of a normal fluid does not eliminate the diagnosis of poliomyelitis, and an increase in cells, while compatible with such a diagnosis, does not prove it. The fatigue of the trip to the hospital together with that of the lumbar puncture may perhaps change a nonparalytic to a paralytic case. This statement is hard to prove but is believed to be true by many authorities.

In cases in which spinal fluid examination is thought necessary, the preferable course is to have it done in the home. If it is not done by the family physician or a consultant, then it may be done by a team provided by the local health authorities, as it is in Nassau County, Long Island, New York. The spinal fluid can then be examined at the bedside and the findings evaluated in connection with the history and physical examination.

The epidemic overcrowding of poliomyelitis wards of hospitals would be greatly relieved if most of the patients with suspected poliomyelitis and patients without paralysis were kept home. Many public health authorities and hospital administrators would be "willing to settle for that." But there are also many patients with an acute form of the disease with minor weakness that, in the proper circumstances, might well be cared for at home for their own good. The following case illustrates such a situation.

A 7-year-old boy in a suburban town had over a week end what was thought to be a mild case of grippe. He was back in school on Tuesday, supposedly well, but on Wednesday, he fell four times while running and on arrival home actually told his mother, a pediatrician, he thought he had poliomyelitis. The consulting physician who presently examined him found a suggestion of tightness in the neck, back, and hamstrings, an appreciable foot drop of the right foot due to tightness of the calf muscles, and a suggestion of weakness in the right leg generally that was identifiable only in the anterior tibial muscle and the short dorsiflexor of the big toe. He was kept home in bed, and no lumbar puncture was done. He had three hot tubs a day and frequent gentle stretching of the right calf. In about 10 days, when the tightness had been released, a very gradual return to guided exercising was allowed, leading up to weight bearing. At the end of three weeks no weaknesses or tightnesses could be defined, and he was given a two week schedule of further gradual return to normal activity.

There can be little disagreement about the advisability of keeping such a patient as the one in the preceding case at home, but the decision in the following case was more difficult.

An 8-eight-old boy in a comfortable home in a remote suburb had a more or less elevated temperature for four or five days, a moderately sore throat, and general malaise. On a Thursday morning his oral temperature was 101.5 F. At noon he several times regurgitated some fluid through his nose, and blurred speech developed. When seen by a consultant in the evening, his temperature was 100 F. He could control his swallowing so that when he sipped water carefully no fluid appeared in his nostrils, but his soft palate on rising lagged to the right, and he still had muffled speech. There was a suggestion of a stiff neck, and positive Kernig signs were elicited. His parents and the local pediatrician all felt sure he was a little better than he had been earlier in the day. The nearest hospital for contagious diseases was a thirty minute drive away. It was generally agreed that, although he apparently had bulbar poliomyelitis, he was in no immediate danger and a course of complete rest was decided on. A nurse was summoned and instructed to watch him carefully during the night, particularly noting his pulse and respiration rates, his ease of breathing and sleeping, and of course his swallowing. She was told to handle him as little as possible (and when he was awake someone was to read aloud to him). The next morning, Friday, there were no signs of progression, and in the afternoon his temperature was normal. No spinal puncture was done and he went on to a complete recovery, although he continued to have a slight speech difficulty for several weeks. It was thought that if he had had the fatigue, both physical and nervous, of the trip to the hospital, he might have had much more trouble with his bulbar poliomyelitis and possibly not nearly as good an outcome.

Thus there are circumstances in which a patient with acute poliomyelitis with some weakness, even with some bulbar manifestations, may advantageously be kept at home for treatment, particularly when the patient has already begun to improve by the time the decision is being faced. For instance, the child whose only weakness is in the muscles supplied by a facial nerve might well be kept at home because no special treatment besides watchful care can be given him in the hospital. However, in any case, adequacy of the accommodations available in the home and of the attending personnel may, of course, be a deciding factor.

On the other hand there are clinical manifestations in patients thought to have poliomyelitis that demand hospitalization if it is in any way possible. Incidentally, the transportation should be done without hurry and bustle and with a minimum of fatigue to the patient, who should be lying comfortably relaxed on a stretcher. Some of these definite indications for hospitalization are: an increasing elevation of temperature; the fact that the patient "looks sick" and is getting sicker; urinary difficulties; some weakness in a deltoid muscle, which may be followed by weakness in the diaphragm. In fact, any slight suggestion of breathing difficulty is an indication, as are such signs of possible bulbar poliomyelitis as nasal regurgitation and voice change, if they are persistent, and particularly any difficulty in swallowing. If the early bulbar signs are accompanied by a rising blood pressure suggestive of irritation of the vasomotor center, hospitalization is urgent because vasomotor failure may ensue.

Whether patients in the acute stage with weakness in extremities but without bulbar involvement or breathing difficulties should be hospitalized depends also on a number of factors other than the patient's condition. If the home has inadequate facilities for his care, if there is no one to give him the necessary care, or if there is too much emotional instability in the family, the patient is much better off in a hospital. If his treatment will require special equipment, or if his condition requires frequent observation by a physician who cannot visit his home often enough, the patient should be hospitalized The emotional instability of other families in the neighborhood and their possible panic if a patient with poliomyelitis is kept nearby must also be considered.

For patients with early acute poliomyelitis who are kept at home, the care is not complicated. Isolation in his own bed in his own room is of course indicated, but rigid isolation is usually not practical nor really necessary. The rest of the family is presumably already infected by the time the patient's disease is identified. The attendant should, of course, wash her hands carefully after touching the patient before going elsewhere. Quarantining the other members of the family should consist only of removing the siblings from school for two weeks, and all the members of the household should avoid crowded places and homes of other persons for the same period.

The patient's bed should have a firm mattress but a bedboard is not usually necessary in mild cases. A footboard is useful for keeping the weight of the bed clothes off the patient's legs. He is allowed to lie in any position in which he is comfortable and can relax, thereby improving his chances for natural sleep. A quiet environment is essential. When asleep he should not be awakened for anything, but sedation should be avoided lest it mask progress of the disease, particularly development of breathing difficulty. Being read aloud to is an excellent soporific for many children, and administration of acetylsalicylic acid (aspirin) is also permitted. Backaches and general tenderness can best be relieved by moist heat, most advantageously given in most homes by immersion in a bath tub with water at body temperature, subsequently raised to 102 to 104 F. The patient should never be left alone while immersed in the tub, lest he faint, an accident that cold cloths applied to the head help to prevent. Two to four such soaks a day of 5 to 15 minutes each are soothing and comforting, though exhausting to some. When use of a tub is not practical, if the patient in bed is turned over onto his chest, hot compresses of pieces of wool blanket dipped in boiling water, then put twice through a wringer, and gently placed on the patient's neck, back, thighs, calves and feet, and left on for 10 minutes are both soothing and relaxing to tight muscles. After this treatment has been repeated once, if the patient is asleep as is often the case, he should not be touched; otherwise it is wise to turn him onto his back and passively move each extremity at each joint as far as can be done without causing pain. Such treatment of packs and passive motion may well be given three or four times in each 24 hours.

Many patients cannot eliminate when supine, and some might be allowed to use a bedside commode. A boy who is having difficulty in urinating may be allowed to sit on the side of the bed to use a bottle, especially if he is steadied by someone. Cathartics are apt to cause only increased peristalsis without actual elimination, and simple enemas should be used daily or every other day when indicated. Except possibly for quinine, which helps to relieve muscle twitchings and actual cramps in the voluntary muscles, no medication other than acetylsalicylic acid is indicated in the home care of poliomyelitis, such chemotherapeutic preparations as are now known having no effect against the poliomyelitis virus.

There remain, however, two important aspects of home care of patients with poliomyelitis to be mentioned. In the first place, the patient should be watched constantly and carefully for the possible development of any of the features already described that indicate transfer to a hospital. In the second place, an attitude of hopeful confidence by all concerned should be encouraged.

When the patient is afebrile, complete muscle testing should be done. If no weakness can be found and the tightness is essentially gone, the patient can be allowed gradually progressive activity, progressing first to a bedside chair, then to bathroom privileges, then after three weeks to quiet activity at home, with frequent rest periods. All fatigue or exhaustion should be avoided till at least five weeks from the onset.

To help the family adopt in the home the program of care suggested by the physician, public health nursing organizations have nurses who, for example, can teach the family the rudiments of isolation technique, the hot pack treatments, and the adaptation of the bed as indicated for the comfort and welfare of the patient. Such nurses are usually available to make follow-up visits to see how the family and patient are getting along, and can report periodically to the physician on any problems that may come up between his visits. They also can help in allaying some of the fears of the family, and, if contacts need to be made with other community resources, they can usually, under the physician's direction, take the necessary steps in behalf of the family.

To serve the family physician who feels he needs diagnostic help or moral support in the home care of patients, some county medical societies, in cooperation with the local health department, appoint a panel of diagnostic consultants, one of whom is constantly available. Through health departments and other agencies, or from hospitals, visiting nurse and also physical therapy services are or can be made available. For patients needing considerable follow-up care, suitable outpatient clinics should be available.

In many communities a campaign of education will be needed for the sake of the neighbors. At the mere mention of poliomyelitis no one can have complete peace of mind, but most unnecessary fear can be relieved by correct information. All of this would be much less expensive than hospitalization, would lighten the demands placed on hospitals especially in times of epidemics, would satisfy the desires of the patients and their parents, and above all would avoid unnecessary exposure of the patient to the fatigue of travel at a time when fatigue is damaging to a poliomyelitis patient.

SUMMARY

Reasons are given for modification of the present widespread tendency to send at once to hospitals every patient whose illness is at all suggestive of acute poliomyelitis. Most patients with suspected poliomyelitis, nonparalytic forms, and many of the mild forms of the disease might better be cared for at home, particularly if the local health authorities can provide not only diagnostic consultation to aid the family physician to differentiate poliomyelitis from other conditions but also can provide the family physician with visiting nursing and physical therapy to care for the patients in the home. Outpatient clinics should be available for follow-up care. Cases in which home treatment is suitable are described, and their management is discussed. Indications for hospitalization and some conditions and factors that make care at home undesirable are stated.

25 Claremont Ave.

BLOOD LOSS DURING OPERATIONS

Harry C. Saltzstein, M.D.
and
Laurence M. Linkner, B.A., Detroit

There have been enough significant studies reported to show that measuring blood loss during an operation is a practical and worth-while procedure. Although it has become a standard method in some clinics, it is not a generally accepted and routine practice.

Gatch and Little,[1] in 1924, were the first to measure blood loss. Blain,[2] in 1929, commenting on his experience with 3,000 transfusions, noted that "the amount of blood lost during operations is often several times greater than that estimated by the surgeon."

Within the past few years articles by Coller and his associates and by Stewart,[3] studies from Wangensteen's clinic, and reports by several others have resulted in the following conclusions:

1. The blood loss is always greater than the surgeon may estimate or anticipate.
2. There is no correlation between the amount of blood lost and the changes in the hematocrit, hemoglobin, red blood cell count, and plasma protein concentrations, and, therefore, these values cannot be used to estimate blood loss.
3. There is often an appreciable postoperative loss, which may be almost as large as the loss during the operation. This is especially true after transurethral prostatectomies, intracranial operations, osteotomy, and extensive dissections. It may be insidious.
4. There are two distinct advantages in replacing blood loss immediately: (*a*) Immediate replacement of the total quantity of blood that is lost restores blood volume fully. After three hours a considerably larger quantity is required; after six hours, transfusions may not reestablish and maintain normal blood volume.[4] (*b*) The body's ability to replace red blood cells that have been lost is very limited, and depleted red cells may not return to normal until several weeks after the loss occurs. There is then a decrease in oxygen-carrying blood cells, which may increase postoperative morbidity and the liability to complications of all sorts. Minimal losses (300 cc.) may retard convalescence.
5. Older patients, and patients who have had chronic infections, loss of weight from malignant disease, or prolonged drainage with loss of body fluids, tolerate operative blood loss very poorly. Also, such patients, especially elderly patients, tolerate overloading of the circulation very poorly. In both these groups there is a decided clinical advantage in knowing how much blood is lost and in replacing it immediately.[5]

Pratt,[5] in a recent article, describes extensive total fascia and subcutaneous tissue excision for massive lymphedema. He states: "The apparently innocuous continuous loss of blood and serum may not be a registerable factor for some time, and then profound shock, which may be irreversible, may occur suddenly. . . . *Quantitative replacement is of great importance, and it must be emphasized that only by weighing sponges and clots can the amount of blood loss be calculated.*" Bonica and Lyter[6] have recently reviewed the American literature and summarized blood losses in a thousand cases reported in the literature and reported on 748 determinations of their own.

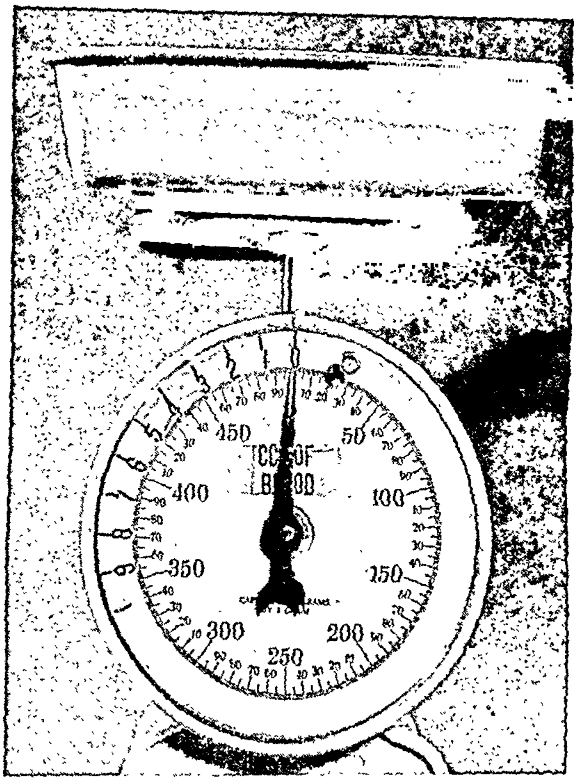

Fig. 1.—Diabetic scale adjusted for weighing dry sponges, with a metal instrument pan (8 by 8 by 2 in.) fastened to the weighing platform. *Instructions for use are as follows*: 1. Use dry pads. 2. *Each black line indicates the weight of one dry pad.* 3. *Place blood-soaked pads in the pan.* 4. Turn face dial clockwise so that top arrow is opposite the number of pads. 5. Read *cubic centimeters of blood* on pointer.

METHOD

The first methods were colorimetric, wherein the sponges were washed, the blood laked, and the loss measured by matching the color against a known standard. In 1946 Baronofsky[7] showed that the gravimetric method, i. e., simply weighing dry sponges, is just as accurate. It is much simpler and is the generally accepted procedure. If dry towels or pads are clamped to the wound, the loss in the drapes and other toweling is rarely

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From the Surgical Service of Harper Hospital (Dr. Saltzstein).

Elizabeth H. Levy, B.A. and Schayel R. Scheinberg, M.D., assisted in this work.

[1] Gatch, W. D., and Little, W. D.: Amount of Blood Lost During Some of the More Common Operations, J. A. M. A. **83**: 1075-1076 (Oct. 4) 1924.

[2] Blain, A. W.: Impressions Resulting from 3,000 Transfusions of Unmodified Blood, Ann. Surg. **89**: 917-922 (June) 1929.

[3] Stewart, J. D., and Rourke, G. M.: Changes in Blood and Interstitial Fluid Resulting from Surgical Operation and Ether Anesthesia, J. Clin. Investigation **17**: 413-416 (July) 1938.

[4] Price, P. B.: Blood Volume in Health and Disease, J. A. M. A. **145**: 781-785 (March 17) 1951.

[5] Pratt, G. H.: Surgical Correction of Lymphedema, J. A. M. A. **147**: 1121-1126 (Nov. 17) 1951.

[6] Bonica, J. J., and Lyter, C. S.: Measurement of Blood Loss During Surgical Operations, Am. J. Surg. **81**: 496-502 (May) 1951.

[7] Baronofsky, I. D.; Treloar, A. E., and Wangensteen, O. H.: Blood Loss in Operations; A Statistical Comparison of Losses as Determined by the Gravimetric and Colorimetric Methods, Surgery **20**: 761-769 (Dec.) [illegible].

more than about 50 cc. (except in such operations as radical mastectomy or posterior resection of the rectum), and this can usually be disregarded.[6] If there is objection to dry sponges placed inside the abdomen, the amount of sodium chloride solution in which the sponges are moistened can be measured, and the loss of the sodium chloride solution that has been taken up by the sponges is estimated and subtracted.[6] We have not done this.

A simple diabetic scale of the dial and pointer type accurate to 0.1 gm. can be purchased in any surgical instrument store. The dial is corrected for the weight of the dry sponge and then the number of grams of blood in the sponge can be read directly (fig. 1).[8] As many as five or six sponges can be weighed at one time. Grams are expressed as cubic centimeters of blood lost. In addition, any fluid aspirated is caught in a trap bottle on the floor, and this amount is added to the blood loss. The method is simple enough so that the circulating nurse, even though not experienced, can execute it satisfactorily.

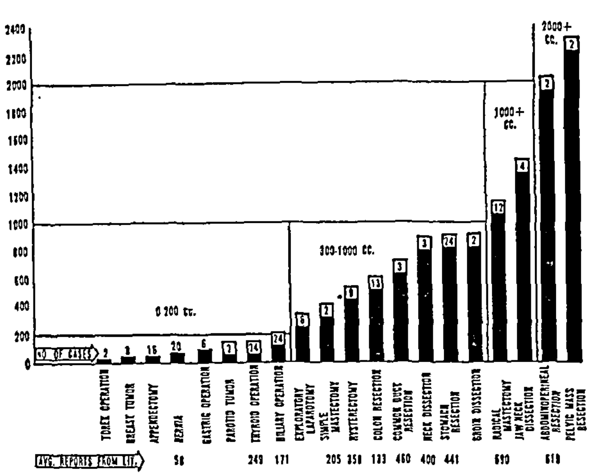

Fig. 2.—Graph of blood loss (in cubic centimeters) in various surgical procedures, with some comparison (figures at the bottom of the illustration) with losses reported in the literature and reviewed by Bonica and Lyter.

RESULTS

Weighing blood lost permits the surgeon to know more precisely the amount of blood the patient is likely to lose or has lost in any particular operation. We have found this knowledge extremely valuable. Styles and methods of dissection differ with individual operators. Sharp accurate dissection and hemostasis take a long time in some operations, and the blood loss from wound edges, small capillaries, or venules, which may be exposed for a long time, may not be appreciated.

We report herewith a series of 212 operations in which we have measured the blood loss (see the accompanying table). The series is consecutive except for a few cases in which, for various reasons, the sponges were not weighed or the data were inaccurate. Figure 2 shows the blood loss in 174 operations. Although the series is small from the standpoint of a large number of operations of any particular type, certain points are evident:

1. Certain operations are regularly accompanied by a minimal loss of blood, ranging from 20 cc. to 200 cc. These include appendectomy, herniorrhaphy, cholecystectomy, local excision of a breast tumor, thyroidectomy, and simple stomach operations, such as gastrostomy, gastrotomy, and gastroenterostomy.

2. There is a middle group, colon resections, exploratory laparotomy, simple mastectomy, neck dissection, gastrectomy, and groin dissections, in which the operative blood loss was 300 to 1,000 cc. Some of these figures are higher than the averages Bonica and Lyter recorded from the literature. This simply indicates that every surgeon should know approximately how much blood loss to anticipate in a given operation, using the technique of his choice.

Blood Loss During Surgical Operations in the Authors' Series

Operation	No. of Cases	Blood Loss Maximum (Cc.)	Minimum (Cc.)	Average (Cc.)
Neck operations				
Neck dissection	3	1,002	721	899
Jaw and neck dissection	4	1,873	1,098	1,444
Partial neck dissection	4	477	122	320
Parotid tumor	2	156	141	149
Thyroid operations				
Thyroid adenoma	3	74	15	53
Subtotal thyroidectomy	8	429	68	222
Thyroid lobectomy	11	428	11	113
Thyroid carcinoma	2	285	126	206
Thyroglossal cyst	1	...	...	147
Breast operations				
Simple mastectomy	2	465	362	419
Radical mastectomy	12	2,385	547	1,151
Local tumor, excision	8	67	14	49
Gastric operations				
Gastrostomy	3	78	38	54
Gastrotomy	2	220	93	157
Gastroenterostomy	1	...	...	109
Gastrectomy	..	...	...	...
Subtotal for ulcer	18	1,640	349	855
Subtotal for carcinoma	4	1,456	820	1,005
Esophageogastrectomy	2	1,706	872	1,289
Biliary operations				
Cholecystectomy	24	718	76	219
Choledochostomy	3	931	502	732
Cholecystojejunostomy	1	...	...	656
Intestinal operations				
Upper abdominal exploration (inoperable)	6	763	131	353
Small bowel resection, adhesions	2	567	96	332
Colon resection	13	1,342	210	613
Abdominoperineal resection	2	2,830	1,243	2,037
Appendectomies	16	124	8	51
Pelvic operations				
Hysterectomy for fibroid tumor	9	837	252	541
Resection for extensive pelvic mass	2	3,047	1,565	2,306
Herniorrhaphies				
Inguinal	20	212	25	73
Inguinal, recurrent	3	77	48	62
Ventral	1	...	...	347
Femoral	1	...	...	40
Umbilical	1	...	...	116
Torek	2	54	12	33
Perineal operations				
Vaginal plastic	1	...	...	60
Vaginal myomectomy	2	194	80	137
Groin dissections	2	1,124	715	920
Vascular operations				
Vein ligation	2	33	33	33
Vein stripping	1	...	...	1,121
Amputation (leg)	1	...	...	179
Miscellaneous operations				
Excision pseudo pancreatic cyst	1	...	...	800
Excision lipoma wall of cecum	1	...	...	106
Gastric hemorrhage	1	...	...	868
Excision polyp colon	1	...	...	160
Splenectomy and nephrectomy	1	...	...	2,006
Salpingo-oophorectomy	1	...	...	510
Nephrostomy	1	...	...	167
Total	212			

3. Extensive cancer operations, as one might expect, may be accompanied by a large blood loss. An occasional benign tumor, often pelvic, must be dissected away from adherent structures, with considerable blood loss. It has

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[8] Gross, R. E.: A Scale for Rapid Measurement of Blood Which Is Lost in Surgical Sponges, J. Thoracic Surg. 18: 543-545 (Aug.) 1949.

been well noted in several studies that greatest blood loss may accompany radical breast operations and abdominoperineal resections. Chest, intracranial, and orthopedic procedures, which are not included in this series of cases, are frequently in this category. Combined jaw and neck dissections may also be accompanied by large blood losses. In a recent article by Royster and co-workers [9] from the University of Pennsylvania Hospital, the average amount of blood lost in 11 jaw and neck dissections was 3,500 cc. In radical neck dissections alone there was a loss of 2,500 cc.

4. Although local removal of a breast tumor is accompanied by very little blood loss, there may be an appreciable blood loss in a simple mastectomy.

5. In abdominal explorations for inoperable cancer, at which nothing definitive is done, one may expect considerable bleeding, because of the vascularity of the tissues and, oftentimes, the amount of time and dissection necessary for a thorough exposure to determine inoperability. (In six such operations there was an average loss of 348 cc.) Because in such cases there is usually advanced cancer, and therefore considerable weight loss, this blood should be replaced.

6. In any such series, with small totals of individual operations, a statistically significant average may not be obtained, but the data are nevertheless important. The three operations on the common duct (fig. 2) were extensive secondary procedures, not the usual exploration accompanying cholecystectomy. In 18 cholecystectomies for chronic cholecystitis the blood loss ranged from 78 to 260 cc. In the six cases in which an acutely inflamed gallbladder was removed, the blood lost in each instance was more than 300 cc. (320 to 700 cc.). Dissection through inflamed hyperemic tissues about the cystic duct and gallbladder bed accounted for this difference. The two abdominoperineal resections were very radical procedures, one of which included two-thirds of the sigmoid colon. A few of the hysterectomies necessitated extensive dissections.

7. There were two extensive dissections of pelvic masses. In one there was a large fixed fibroid, grown onto an attenuated urinary bladder and thinned out vagina; the other involved a difficult resection of an ovarian carcinoma. In order that injury to ureters and other deep pelvic structures may be avoided, careful dissection under vision is essential. In such operations, it is a distinct advantage for the operator to know how much blood is being lost at all stages of the procedure and to replace it immediately rather than later, after mild shock has supervened.

DETERMINATION OF BLOOD VOLUME

Although determinations of blood volume were not done, a consistent effort was made to bring all patients to surgery with anemia corrected, low plasma protein corrected well in advance of the operation, and electrolyte balance adjusted and maintained. The hemoglobin was brought up to 11 or 12 gm., and a patient with hemoglobin of 9 gm. was not considered to be ready for operation until 500 to 1,000 cc. of blood had been given.

The chief advantage of blood volume studies lies in the preoperative preparation, particularly in debilitated patients. Recent studies have shown that patients who have lost much weight; or who have had symptoms of long duration; or who have carcinoma, especially intra-abdominal; and those who have had prolonged drainage with loss of serum protein may have a deficit that is much greater than anticipated. Anemia cannot be corrected quickly—for example, during a surgical operation—if there is a severe deficiency. The circulatory system has adjusted to the lower blood volume, and, even after the introduction of as little as 500 cc. of whole blood, an interval is required for compensation.[4]

In Royster's [9] two parallel series of cases, he used twice as much blood when he made up the blood volume deficit before operation as when he did not. However, in the group in which the deficit was taken care of preoperatively, there was much less operative shock or blood pressure drop during the operation.

In this total series of 212 consecutive patients treated surgically by one of us (H. S.), there was one death, that of a woman, 75, who had a thyroidectomy for carcinoma. Preoperatively there was pressure on the retrolaryngeal esophagus and paralysis of one vocal cord. Tracheotomy was done the day after surgery, but she died of bronchopneumonia on the ninth day.

There were a few instances of drop in blood pressure during the operations, but these were corrected immediately. This study has made us "hemostasis conscious." During resection of an inflamed mesentery in a boy with regional ileitis, a suture needle pierced a small vein. The blood that was lost before the field was dry was measured and amounted to 150 cc. This was one-fourth of the total loss of blood for the entire resection of two separate loops of small bowel. In another case a small venule in the broad ligament, which was left oozing until the tumor was elevated out of the pelvis and freed, was responsible for one-half of the 500 cc. of blood lost during the entire hysterectomy. We feel that the postoperative oozing, or intra-abdominal hematomas, from such minor incidents are often responsible for a few days' increase in pulse rate, slight distention, and slow convalescence.

There were no instances of overloading of the circulation in elderly patients since this regimen of measuring blood lost in the operating room was instituted. We did have one or two instances of embarrassment of the circulation before this routine was adopted. The following case is an example of such embarrassment.

A small woman, aged 78, underwent extensive gastrectomy for carcinoma. There was only moderate blood loss in the operating room; 1,100 cc. of blood was given during the operation. She left the operating room in good condition: her skin was warm and moist, her pulse rate 80, and respiration rate 16, and she had good color. Four hundred cubic centimeters of blood was given during the hour and a half immediately following surgery. Shortly thereafter (in another half-hour) she was breathing heavily and had slight cyanosis, and moist rales were heard throughout the lung fields. Results of immediate bronchoscopy were negative: there was no atelectasis, and very little bronchial secretion was brought up. She was digitalized and placed in an oxygen tent. There were no abdominal complications. She took food in 48 hours. Although she slowly improved for a few days, she never regained pulmonary sufficiency and died two weeks after the operation, with clinical and x-ray signs of spreading pneumonia.

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[9] Royster, H. P.; Pendergrass, H. P.; Walker, J. M., and Barnes, M.: The Value of Blood Volume Determinations in Radical Operations for Cancer of the Head and Neck, Including Measurements of Operative Blood Loss, Ann. Surg. 133:830-836 (June) 1951.

Continued hemorrhage in the postoperative period occurred rarely: in an occasional case of intra-abdominal resection, in one case of abdominoperineal resection, and in an occasional case of radical breast amputation. In these instances, blood pressure, hemoglobin, and the like were watched carefully and blood was given freely within the first few days when indicated.

Although all the usual postoperative complications were encountered at one time or another, this series of patients was remarkably free of postoperative wound infections, wound rupture, obstructions, adhesions, and major pulmonary complications. There were several patients with mild thrombophlebitis of the calf veins who were treated successfully with the usual anticoagulants. The series contained more than the usual number of elderly patients, and many of the operations were radical resections for cancer of one body region or another.

CONCLUSIONS

Measurement of the blood lost in a consecutive series of 212 surgical operations revealed the following data:

1. Certain operations, such as appendectomy, hernia, thyroidectomy, and cholecystectomy, are accompanied by minimal loss of blood, about 200 cc.
2. A middle group, including hysterectomy, colon resection, and stomach resection, is accompanied by losses ranging from 300 to 1,000 cc.
3. Losses greater than 1,000 cc. are likely to take place during radical breast amputation, abdominoperineal resections, combined neck and jaw dissections, or extensive intra-abdominal dissections of large adherent tumors.
4. Averages of blood loss values obtained for a given operation vary with different surgeons.
5. Correcting preoperative anemia and replacing blood lost during the operative procedure contributes in a surprising degree to freedom from postoperative complications.

966 Fisher Bldg. (2) (Dr. Saltzstein).

EOSINOPHIL RESPONSE TO EPINEPHRINE AND CORTICOTROPIN

STUDIES IN ALCOHOLICS AND NONALCOHOLICS

Charles W. Dowden, M.D.
and
James T. Bradbury, Sc.D., Louisville

Chronic alcoholism, since it has been termed a disease or illness, has attracted attention in several different fields of medicine, such as psychiatry, nutrition, and endocrinology. Reports of similarities of postmortem findings between Addison's disease and delirium tremens have led to the consideration of adrenal cortical hypofunction in patients with chronic alcoholism, and, from the clinical standpoint, blood chemistry studies have been said to show changes in patients with chronic alcoholism that are also similar to those found in patients with Addison's disease.[1] On the basis of such findings adrenal cortex extract has been administered parenterally to alcoholics with severe "hang-over" symptoms or delirium tremens.[2] Rather dramatic relief of symptoms within 24 hours or less has been described. Patients with Korsakoff's psychosis have been reported to respond remarkably well.[2a] Dosages of adrenal cortex extract have varied, but generally aqueous preparations have been given intravenously or lipo-adrenal cortex has been given intramuscularly.[3] More recently Smith [4] has investigated the eosinophil response to epinephrine and corticotropin (ACTH) in patients with chronic alcoholism in an effort to evaluate pituitary-adrenal function in these patients. Various authors as reported by Goldfarb and Berman [5] have found evidence of hypoplasia of the adrenal cortex in animals in which "chronic alcoholism" was induced. However, hyperplasia has been found also. Smith [2b] has also reported that alcohol is a stress agent in rats, in that it produces definite eosinopenia.

Controversy has existed as to the role the adrenal glands play in alcoholism—whether hypertrophy or atrophy predominates in different stages and whether alcoholism plus poor diet is the cause or effect of such changes.[6] The need for adequate control studies has been stressed.[7]

In the present study we attempted to determine whether it was possible to detect some evidence of adrenal or pituitary-adrenal insufficiency in chronic alcoholics.

From the Department for Treatment of Alcoholism, Norton Memorial Infirmary, and the Institute for Medical Research, University of Louisville School of Medicine.

1. Smith, J. J.: A Medical Approach to Problem Drinking: Preliminary Report, Quart. J. Stud. on Alcohol **10**: 251-257 (Sept.) 1949.

2. (*a*) Smith, J. J.: The Role of the Adrenal Gland in Alcoholism, in Proceedings of the First Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1949, pp. 566-574. (*b*) Tintera, J. W., and Lovell, H. W.: Endocrine Treatment of Alcoholism, Geriatrics **4**: 274-280 (Sept.-Oct.) 1949.

3. (*a*) Smith.[2a] Tintera and Lovell.[2b] (*b*) Smith, J. J.: The Endocrine Basis and Hormonal Therapy of Alcoholism, New York J. Med. **50**: 1704-1706 (July 15) 1950.

4. Smith, J. J.: The Blood Eosinophil Responses of the Alcoholic to Epinephrine and to ACTH, with a Note on the Treatment of Chronic Alcoholism with ACTH, in Proceedings of the Second Clinical ACTH Conference, Vol. II: Therapeutics, Philadelphia, The Blakiston Company, 1950, pp. 161-171.

5. Goldfarb, A. I., and Berman, S.: Alcoholism as a Psychosomatic Disorder: I. Endocrine Pathology of Animals and Man Excessively Exposed to Alcohol: Its Possible Relation to Behavioral Pathology, Quart. J. Stud. on Alcohol **10**: 415-429 (Dec.) 1949.

6. (*a*) Goldfarb and Berman.[5] (*b*) Wexberg, L. E.: A Critique of Physiopathological Theories of the Etiology of Alcoholism, Quart. J. Stud. on Alcohol **11**: 113-118 (March) 1950.

7. Smith.[4] Wexberg.[6b]

METHOD OF STUDY

The subjects of this study belong to three groups: (1) "active" alcoholics, (2) "arrested" alcoholics, and (3) nonalcoholic controls.

The term "active" was arbitrarily chosen to designate patients in the unit for treatment of alcoholism. "Arrested" refers to volunteers from Alcoholics Anonymous with periods of sobriety varying from one to five years. In this study all members of Alcoholics Anonymous with less than one year's sobriety were included in the active group. The nonalcoholic controls were chosen from hospital personnel, such as nurses and aides, and from personnel of an industrial plant, consisting of men in supervisory or in executive positions with records of many years of steady service.[8] A few friends of patients also participated. Many of these controls were social drinkers, but few were teetotalers.

All laboratory work was done in the endocrine laboratory of the University of Louisville School of Medicine. The four-hour epinephrine and corticotropin [9] tests as described by Thorn [10] were performed on the alcoholic subjects as follows:

In the "active" group, a total number of 80 subjects were examined. Fifty-six of these received one epinephrine test each (two were tested twice). Forty-five of the 80 subjects received one corticotropin test each (five were tested twice). Thus, 21 subjects of the group of 80 received one test with each substance.

A total of 19 "arrested" alcoholics were examined. Twelve of these were tested once with epinephrine, and 17 were tested once with corticotropin. Ten subjects of the group of 19 received one of each test.

Examinations in the "active" group were done on one of the last days of hospitalization. Routine treatment with parenterally administered vitamins, fluids, and in many cases adrenal cortex extract had been carried out earlier, but treatment was usually minimal at the time of the test, and most of the severe "hang-over" symptoms had subsided. Included in this active group were eight ex-patients or members of Alcoholics Anonymous who had been abstinent for a period of several weeks or months only and who reported to the hospital as outpatients for their tests. A period of one or two days intervened between examination of those subjects who received both epinephrine and corticotropin tests.

We planned to study 12 nonalcoholic volunteers from hospital personnel as follows: Each volunteer was to be subjected to one four-hour epinephrine, one four-hour corticotropin test, and three separate tests with 0.5 cc. of isotonic sodium chloride solution given subcutaneously as a placebo. These examinations were to be performed at weekly intervals, so that, for example, tests with isotonic sodium chloride solution would be done on the same day in the first, third, and fifth weeks, epinephrine response tests in the second week, and corticotropin tests in the fourth week. However, six subjects each received only two tests with the sodium chloride solution.

The 16 control nonalcoholic industrial workers were examined in much the same manner except that the sequence of the tests in successive weeks was corticotropin, sodium chloride solution, and epinephrine. (One subject failed to receive a test with the sodium chloride solution.) Complete facilities for drawing blood and giving injections by our own nursing staff were arranged in the first aid department of the plant. Each volunteer reported for his test before or shortly after starting his work in the morning. The four-hour blood specimens were drawn fairly promptly, but delays up to 30 minutes were encountered in a few cases.

Combining the two nonalcoholic groups, therefore, a total of 28 subjects each received one epinephrine and one corticotropin test; 27 of these same subjects also received a total of 45 tests with isotonic sodium chloride solution.

In addition, 12 nonalcoholic subjects received only a single corticotropin test, making a total of 40 in the entire control group. The batch of corticotropin used in this group contained only 65-mg. vials, and three 21-mg. doses were obtained from each vial to eliminate wastage and possible inaccuracy in measuring doses. In all control subjects 21-mg. doses of corticotropin were used, but Thorn,[10] in figure 22, indicates that the difference in eosinophil response is not significant when 21 or 25 mg. doses of corticotropin are used.

None of our subjects in any group was given specific instructions to omit his usual meals on the day of his examinations, nor was a specific time arranged for conducting any test, chiefly because we were obliged to suit the convenience of the volunteers. Generally, however, they were started during the midmorning hours.

Six alcoholics and one nonalcoholic received corticotropin in doses of 20 mg. in 500 cc. of isotonic sodium chloride solution by slow intravenous drip [11] over an approximate eight-hour period. The alcoholics had had periods of sobriety varying from several weeks to three years at the time of the tests. Circulating eosinophil counts were performed prior to and immediately on completion of the infusion. Food was allowed during the eight-hour period if desired. Forty-eight hour corticotropin tests [10] were performed in seven alcoholics, several of whom had been subjected also to four-hour or eight-hour intravenous tests.

RESULTS

The average age of the 99 alcoholics, including arrested alcoholics, was 44 years, the youngest being 27 and the oldest 60 years. The average age of the 40 subjects in the nonalcoholic group was 35 years, the youngest being 19 and the oldest 61 years. There were 12 women in the group of active alcoholics and five in the group of arrested alcoholics. In the nonalcoholic controls 11 were women.

The eosinophil responses in the various tests are presented graphically in figure 1. It is obvious that there was a similar average response in three test groups, namely, nonalcoholics given epinephrine and both groups given corticotropin. In these three groups of tests the average drop in the eosinophil count was 47% to 49%. In contrast to these was the relatively small decrease (26%) in the eosinophil count of the alcoholic group given epinephrine. The difference in the response of the alcoholics and nonalcoholics to epinephrine is statistically significant as indicated by a t value of 4.8. The slight fall in the eosinophil count in the nonalcoholic controls given isotonic sodium chloride solution as a placebo agent (i. e., there is an overlapping of fiducial limits with those of the alcoholics given epinephrine) further emphasizes the minimal response of the alcoholic group. The actual numerical values of these observations and their statistical deviations are listed in the accompanying table.

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[8] Employees of American Air Filter Co., Louisville.

[9] The corticotropin prepared by the Armour Laboratories and used in this study was supplied in part by this company and in part by Norton Memorial Infirmary.

[10] Thorn, G. W., and Forsham, P. H.: Metabolic Changes in Man Following Adrenal and Pituitary Hormone Administration, in Recent Progress in Hormone Research: The Proceedings of the Laurentian Hormone Conference, Vol. IV: Committee on Arrangements, New York, Academic Press, Inc., 1949, chap. 10.

[11] Renold, A. E.; Forsham, P. H.; Maisterrena, J., and Thorn, G. W.: Intravenously Administered ACTH: Preliminary Report, New England J. Med. **244**: 796-798 (May 24) 1951. Mandel, W., and others: Intravenous Use of Pituitary Adrenocorticotropic Hormone (ACTH): Report on Its Administration in 25 Patients, J. A. M. A. **146**: 546-551 (June 9) 1951.

Within the alcoholic group the responses of the "active" and "arrested" alcoholics are placed in separate vertical groupings in figure 1. The apparent similarity of the results obtained in these subgroups is verified in the table.

Numerical Values of Test Results

	Alcoholics				Nonalcoholics	
	Active	Arrested	Total This Study	Other Studies	This Study	Other Studies
Epinephrine Tests						
No. of tests........	58 *	12	70	73 †	28	17 ‡
Mean % change.....	—25.1	—29.1	—26	—29	—48.6	—65
Fiducial limits......	......	......	± 9.7	....	±10.4	± 7
Standard deviation	±26.2	±31.3	±27.0	....	±18.4	±12
Corticotropin Tests						
No. of tests........	50 §	17	67	73 †	40	......
Mean % change.....	—47	—47	—47	—56	—49	......
Fiducial limits......	......	......	± 9.0	....	±11.1	......
Standard deviation	±25.2	±21.5	±24.3	....	±23.8	......
Isotonic Sodium Chloride Solution Tests (Controls)					Normal saline	No stimulus
No. of tests........	......	......	......	....	45 ‖	45 ¶
Mean % change.....	......	......	......	....	—10.7	—11.4
Fiducial limits......	......	......	......	....	±12.0	±11.4
Standard deviation	......	......	......	....	±26.5	±25.8

* Fifty-six cases.

† From Smith.[4]

‡ From Best and Samter (estimated from their graph).[14]

§ Forty-five cases.

‖ Twenty-seven cases: 15 cases, one test each; 6 cases, two tests each; and 6 cases, three tests each.

¶ From Rud (table 17A)[12]: 30 cases, one test each; 6 cases, two tests each; and 1 case, 3 tests.

The comparison of eosinophil responses to the 4-hour, 8-hour, and 48-hour intravenous corticotropin tests is shown in figure 2. The following results are readily seen: (1) The subject designated by the open triangle responded to four-hour tests in an erratic manner when studied at intervals of several weeks. (2) In all seven intravenous eight-hour tests the eosinophil response was excellent, amounting to 90% or greater reduction in count. Some of the seven subjects responded poorly to other corticotropin tests as noted in figure 2. (3) The 48-hour tests on the few subjects examined present rather inconclusive results, showing either a better or worse response as compared with the four-hour test.

COMMENT

Although the mean values for the test groups in figure 1 show similarities and differences, the wide scatter of individual responses shows an almost complete overlapping range for all groups. This extreme variability has made it seem that individual tests may have little significance, especially in view of the equally wide range of responses after administration of isotonic sodium chloride solution. In fact, Rud[12] has shown spontaneous fluctuations in eosinophil counts at 15 to 30 minute intervals that are as great as some of those observed under experimental conditions. These spontaneous variations have also been emphasized by Fisher and Fisher.[13] Further study is necessary to determine the significance of these apparently spontaneous variations in the number of circulating eosinophils.

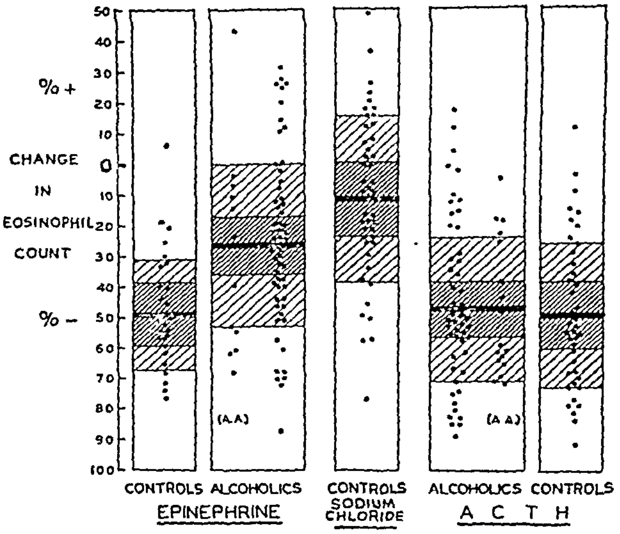

Fig. 1.—Results of tests. Each dot represents the percentage change in eosinophil count from the initial blood to the four-hour blood specimen. In each group, the heavy horizontal line indicates mean or average percentage change; areas including wide and narrow cross hatching indicate standard deviations; those including only narrow cross hatching indicate fiducial limits of mean. "A.A." below the subgroup indicates members of Alcoholics Anonymous ("arrested") of longer than one year's sobriety. Each dot in each column represents a test on a different subject except for those in the middle column, which shows these tests were done on 12 subjects.

In spite of these wide individual fluctuations in the various tests, the mean values are almost identical to those found by other authors. In alcoholic subjects tested with epinephrine, Smith[4] reported an average decrease

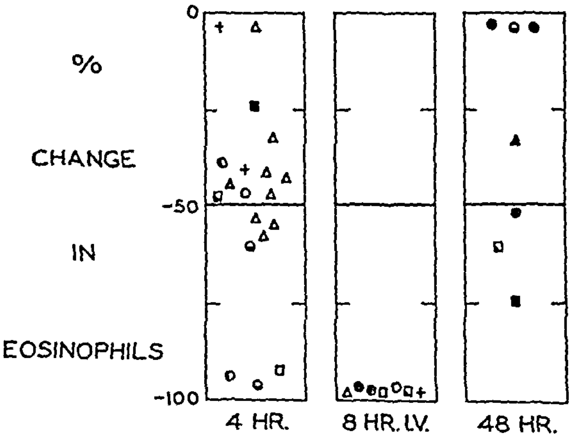

Fig. 2.—Corticotropin tests. Each symbol represents the change in number of eosinophils from the initial count to that at the end of the test. Different corticotropin tests in same subject are indicated by like symbols; solid circles denote single tests in different subjects.

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12. Rud, F.: The Eosinophil Count in Health and in Mental Disease: A Biometrical Study, Acta psychiat. et. neurol., supp. 40, pp. 1-443, 1947.

13. Fisher, B., and Fisher, E. R.: Observations on the Eosinophil Count in Man: A Proposed Test of Adrenal Cortical Function, Am. J. M. Sc. 221: 121-132 (Feb.) 1951.

of 29% in circulating eosinophils as compared with a 26% decrease in our series. Similarly, Best and Samter [14] found a 43% [15] decrease in eosinophils in a group of normal subjects and patients with miscellaneous conditions given 0.2 to 0.4 mg. of epinephrine, whereas our finding in nonalcoholics with a dose of 0.3 mg. was a 48% decrease. However, in Best and Samter's group labeled "normals" alone, a decrease of approximately 65% [16] was obtained in response to epinephrine. Rud's tabulated results show an average decrease of 11.4% in the number of eosinophils during the four hours (8 a. m. to 12 noon) usually designated as the interval for the Thorn test. No stimulus whatever was used in his series. Using 0.5 cc. of isotonic sodium chloride solution as a control, we found that the average response was a 10.7% decrease in eosinophils during the four-hour test interval. The similarity of these results in different laboratories attest to the significance of the tests.

Smith's studies were apparently conducted entirely on alcoholics, and it might be argued that they were in a state of chronic malnutrition. Best and Samter found the poorest eosinophil response (about 35% decrease) in their malnourished patients given epinephrine or ephedrine. The fact that we obtained equally poor responses in the "active" and in the "arrested" alcoholics who had been on good diets from one to five years makes it seem less likely that malnutrition is the prime factor.

There are obvious differences between the mean values for our subjects tested with corticotropin and those reported by Thorn [10] and by Smith.[4] Smith reported an average decrease in eosinophils in alcoholics given corticotropin of 56%, whereas our average decrease was 47%. Similarly, Thorn reported an average decrease of 75% in normal subjects given corticotropin, and we found only a 49% decrease. Several points of difference in technique may account for these discrepancies. Our patients were not subjected to an interval of fasting before or during the test. Rud [12] has shown that withholding breakfast will result in about a 20% decrease in circulating eosinophils during the 8:00 a. m. to noon interval. Mote [16] specifies that breakfast is withheld on the day of the test. Thorn [17] allows the patient to have breakfast immediately after the initial blood specimen is drawn. It has been reported recently that some lots of corticotropin contain extraneous material (possibly proteolytic enzymes) that brings about rapid destruction of the corticotropin when mixed with blood and tissue fluids.[18] This reduces its effectiveness for intramuscular administration, since it may be destroyed in muscle tissue before it is absorbed.

Whatever the cause of the differences in the average decrease in circulating eosinophils in our tests with corticotropin as compared with those of Smith or Thorn (nonfasting state or different lots of corticotropin) our nonalcoholics and alcoholics were tested in a comparable manner. Under these conditions there was no apparent difference in the four-hour eosinophil response of the two groups to corticotropin given intramuscularly.

Because of the variable eosinophil responses to the four-hour corticotropin tests in the same subjects on different days (fig. 2), we would not consider any subjects as having an adrenal cortical insufficiency on the basis of a single poor response. Neither could we draw conclusions from our few 48-hour corticotropin tests, but they are shown for the sake of comparison. However, the eight-hour intravenous tests apparently leave no doubt as to the ability of all these subjects to respond to corticotropin given in this manner even when some had responded poorly to the four-hour tests. Several of these same subjects are among those who responded poorly to the four-hour epinephrine test also.

The studies of Hoagland [19] and co-workers have shown that schizophrenic patients respond to stress agents and stress conditions to a lesser extent than normal persons. They report that those patients who show more nearly the normal response to epinephrine and to corticotropin are those with the best prognosis for rehabilitation. It is yet to be proved whether pituitary adrenal deficiencies may contribute to personality disorders such as schizophrenia or to alcoholism.

SUMMARY AND CONCLUSION

Circulating eosinophil responses to epinephrine and corticotropin (ACTH) in a group of 99 chronic alcoholics with varying periods of sobriety are compared with those responses in a group of 40 nonalcoholic controls. No difference was found between the alcoholic and nonalcoholic groups when comparing mean or average percentage change (–47%) in eosinophil counts in the four-hour corticotropin test. Essentially the same mean value was also found in the nonalcoholic group in response to the four-hour epinephrine test. However, the alcoholic group definitely showed a poorer eosinophil response in the four-hour epinephrine test (–26%).

With 0.5 cc. of isotonic sodium chloride solution used as a placebo, average eosinophil responses in four hours (–10.7%) in a group of control nonalcoholics compared favorably with the average change in a four-hour period (11.4%) found by Rud when no stimulus was used. The effects of fasting on eosinophil counts and the influence of such a factor on results presented are discussed.

Repeated four-hour corticotropin tests in the same subjects at different times may show widely divergent results. Corticotropin administered intravenously in 500 cc. of isotonic sodium chloride solution by slow drip over an eight-hour period would appear to be the most effective method of evaluating the function of the adrenal cortex by circulating eosinophil changes.

The subnormal eosinopenic responses of the alcoholic group to epinephrine suggests the possibility of some deficiency in the production or release of corticotropin by the pituitary. Further study is necessary to determine whether alcoholics are less responsive to other stress agents, but the above findings tend to confirm the clinical impression that adrenal cortex extract is beneficial in the treatment of the acute alcoholic "hang-over" states.

231 W. Oak St.

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[14] Best, W. R., and Samter, M.: Variation and Error in Eosinophil Counts of Blood and Bone Marrow, Blood 6:61-74 (Jan.) 1951.

[15] Estimated from their graph.

[16] The Physiological Basis for the Action of ACTH in Human Beings, Mote, J. R., editor, Chicago, The Armour Laboratories, 1951.

[17] Thorn, G. W., and Forsham, P. H.: Adrenal Cortical Insufficiency, in Textbook of Endocrinology, edited by Robert H. Williams, Philadelphia, W. B. Saunders Company, 1950, chap. 4, pt. 2.

[18] Recent Progress in Hormone Research, vol. 7, to be published.

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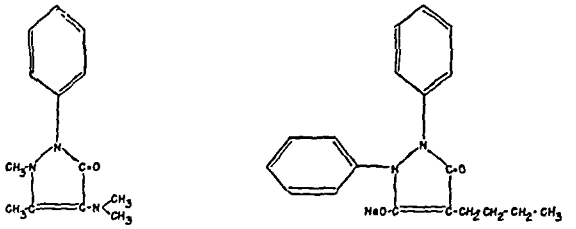
PHENYLBUTAZONE (BUTAZOLIDIN®) IN RHEUMATOID ARTHRITIS AND GOUT

William C. Kuzell, M.D., Ralph W. Schaffarzick, M.D., Beverly Brown, M.S.
and
Eldon A. Mankle, B.A., San Francisco

Phenylbutazone (butazolidin®) is one of a group of pyrazole derivatives developed by the chemists of the J. R. Geigy Co., of Basel, Switzerland, in an attempt to find compounds with pharmacologic properties similar to aminopyrine but without its toxicity (see accompanying figure). Many clinical trials have been conducted in Switzerland and Germany, with a combination of aminopyrine and phenylbutazone in equal parts (the mixture is known as irgapyrin® in Europe and butapyrin® in this country.[1]) These studies were initiated since phenylbutazone was found to promote the solubility of the relatively insoluble aminopyrine, thus permitting its parenteral use. There have been no reports of extensive clinical trials of phenylbutazone alone, whereas the clinical effects and toxicity of aminopyrine are well known. Since the antirheumatic properties of the mixture have been so favorable, it was desirable to evaluate phenylbutazone separately.



Aminopyrine is 4-dimethylamino-1,5-dimethyl-2-phenyl-3-pyrazolone (dimethylaminoantipyrin-aminopyrine) (left) and phenylbutazone is sodium-4-butyl-1,2-diphenyl-3,5-pyrazolidinedione (right).

Considerable pharmacologic investigation has been reported. Wilhelmi [1a] demonstrated that phenylbutazone alone raised the pain threshold to electrical stimulation of the pulp of incisor teeth in rabbits, that it had an antipyretic effect in rabbits infected with Escherichia coli, and that it delayed the development of erythema on the skin of rabbits exposed to ultraviolet irradiation (an anti-inflammatory action). In this latter experiment, phenylbutazone was found to be more effective than aminopyrine or the combination of the two agents (irgapyrin® or butapyrin®). Phenylbutazone was also more effective in inhibiting localized edema and increased capillary permeability produced by the application of irritants such as croton oil. Studying the blood concentrations, Pulver found that phenylbutazone is excreted at a slower rate than is aminopyrine. In the mouse and rat, the LD_{50} of phenylbutazone was lower than that of either aminopyrine or of the mixture. In large doses, these pyrazoles produce tonic-clonic convulsions. In rats, the daily oral administration of phenylbutazone, 50 mg. per kilogram of body weight, was found to produce no apparent chronic toxicity.

The purpose of the present study was to evaluate phenylbutazone clinically in gout and various rheumatic diseases as well as to determine in the laboratory the effect on pituitary-adrenal interrelationship, tissue respiration of cerebral cortex, chronic toxicity, and possible alteration of the experimental polyarthritis of rats.

CLINICAL EVALUATION

Phenylbutazone was administered orally in the form of coated tablets containing 125 or 200 mg. as well as intramuscularly in a 20% solution of its sodium salt. The range of oral dosage was between one and six tablets daily. Parenteral administration was reserved for acute situations, in which the range was 0.6 to 1.0 gm. once daily until relief of symptoms. The period of clinical observation varied from one to five months.

Gout.—As shown in table 1, 48 patients with gout were treated with phenylbutazone, and all showed some degree of clinical benefits. In the majority of patients colchicine had previously been used with varying degrees of success and in many was poorly tolerated in clinically effective dosage. Among 19 patients in whom comparison with the use of colchicine was made, 9 patients responded better to phenylbutazone therapy, 3 responded better to colchicine therapy, and 6 had equivalent results.

From the Department of Pharmacology and Therapeutics, Stanford University School of Medicine.

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1. (*a*) Wilhelmi, G.: Ueber die pharmakologischen Eigenschaften von Irgapyrin, einem neuen Präparat aus der Pyrazolreihe, Schweiz. med. Wchnschr. **79**: 577, 1949. (*b*) Belart, W.: Irgapyrin als Antirheumaticum, Schweiz. med. Wchnschr. **79**: 582, 1949. Pulver, R.: Ueber Irgapyrin, ein neues Antirheumaticum und Analgeticum. Blutkonzentration und synergistische Wirkung bei Pyrazolderivaten, Schweiz. med. Wchnschr. **80**: 308, 1950. Wilhelmi, G.: Ueber die antiphlogistische Wirkung von Pyrazolen, speziell von Irgapyrin, bei peroraler und parenteraler Verabreichung, Schweiz. med. Wchnschr. **80**: 936, 1950. Jaques, R., and Domenjoz, R.: Histamin-antagonistische Wirkung bei Pyrazolen und Antihistaminen, Arch. exper. Path. u. Pharmakol. **212**: 124, 1950. Wilhelmi, G., and Domenjoz, R.: Vergleichende Untersuchungen über die Wirkung von Pyrazolen und Antihistaminen bei verschiedenen Arten der experimentellen Entzündung, Arch. internat. de pharmacodyn. et de thérap. **85**: 129, 1951. Stettbacher, H. R.: Zur Anwendung des injizierbaren Pyrazolonderivates Irgapyrin "Geigy", Praxis **38**: 1069, 1949. Staerkle, A.: Klinische Erfahrungen mit Irgapyrin, Therap. Umschau. **6**: 111, 1949. Bangerter, A.: Erfahrungen mit Irgapyrin "Geigy" in der Ophthalmolgie, Praxis **39**: 268, 1950. Burkhardt, W.; Matis, P., and Bauer, K.: Zur postoperativen Schmerzbekämpfung mit Irgapyrin, Neue med. Welt **1**: 1069, 1950. Gsell, O., and Müller, W.: Parenterale Pyramidon-Pyrazolidin-Therapie von Rheumatismus und Infekten mittels Irgapyrin, Schweiz. med. Wchnschr. **80**: 310, 1950. Loewenhardt, F.: Irgapyrin "Geigy" ein neues Antirheumatikum und Analgetikum aus der Pyrazolreihe, Deutsche med. Wchnschr. **75**: 459, 1950. Fähndrich, W. H., and Junkersdorf, J.: Vergleichende Untersuchungen zur parenteralen Pyramidontherapie, unter besonderer Berücksichtigung des chronischen Gelenkrheumatismus, Deutsche med. Wchnschr. **75**: 1145, 1950. Kienle, H.: Erfahrungsbericht über Irgapyrin—"Geigy," ein neues, hochwirksames Injektionspräparat aus der Pyrazolreihe, München. med. Wchnschr. **92**: 885, 1950. Mehlin, H.: Therapeutische Notiz über Irgapyrin, Therap. Umschau. **6**: 179, 1950. Trompiz, G.: G-15903 (Irgapyrin) als Analgeticum und Antiphlogisticum, Therap. Umschau. **7**: 7, 1950. Fischer, H.: Über Irgapyrin, ein neues Mittel zu parenteralen Pyrazoltherapie der rheumatischen Polyarthritis, Deutsche med. Wchnschr. **76**: 50, 1951. Seliger, H.: Irgapyrin bei rheumatischen Erkrankungen. Über die Bedeutung der Schmerzbekämpfung. Ärztl. Wchnschr. **6**: 89, 1951. Fenz, E.: Wirkungsweise und neue Indikationen von Irgapyrin, Wien. med. Wchnschr. **100**: 754, 1950. Fabre, J., and Mach, R. S.: L'action de l'irgapyrine sur les métabolismes du sel et de l'eau et sur les fonctions rénales, Schweiz. med. Wchnschr. **81**: 473, 1951. Kuzell, W. C., and Schaffarzick, R. W.: Butapyrin® in Acute Gout, abstracted, Stanford M. Bull. **9**: 194, 1951.

In 20 patients, comparison with irgapyrin® (butapyrin®) therapy was made. Of these, 4 responded better to treatment with phenylbutazone, 3 derived more benefit from irgapyrin,® and 13 experienced equal improvement. Comparison with cortisone therapy in three patients demonstrated a similar degree of improvement.

TABLE 1.—*Response of Gout to Treatment with Phenylbutazone*

	Grade of Therapeutic Response,† No. of Patients				
Stage *	I	II	III	IV	Total
I	5	2	1	0	8
II	20	13	7	0	40
Total	25	15	8	0	48

* Stage I, acute gout, with asymptomatic periods between exacerbations. Stage II, acute gout superimposed on chronic gouty arthritis.

† Therapeutic response: Grade I, complete remission in 48 hours or less. Grade II, major improvement, indicating rapid decrease of signs and symptoms within 48 hours, but with slight persistence up to seven days following initial therapy. Grade III, minor improvement with analgesia and decreased swelling, but not complete remission, in spite of continual therapy. Grade IV, *no* effect.

As indicated in table 1, 25 of the 48 gouty patients experienced a complete remission in 48 hours or less. In some instances marked analgesia became apparent within a matter of minutes after intramuscular administration of phenylbutazone.

Serial determinations of serum uric acid showed striking diminution in all patients treated. Forty of the 48 gouty patients had chronic gouty arthritis and were uniformly better on oral maintenance therapy with phenylbutazone than with previous conventional therapy.

Rheumatoid Arthritis.—Phenylbutazone was administered to 29 patients with rheumatoid arthritis. The results were evaluated according to the criteria of the American Rheumatism Association [2] and are presented in table 2.

TABLE 2.—*Response of Rheumatoid Arthritis to Phenylbutazone Therapy**

		Grade of Therapeutic Response, No. of Patients				
Stage	Class	I	II	III	IV	Total
I	I	0	0	0	0	0
II	I	0	0	0	0	0
	II	1	6	2	0	9
	III	0	2	1	0	3
	IV	1	0	0	0	1
III	I	0	0	0	0	0
	II	1	1	1	0	3
	III	0	2	0	0	2
	IV	0	0	0	0	0
IV	I	0	0	0	0	0
	II	0	3	2	0	5
	III	0	3	1	0	4
	IV	0	1	1	0	2
Total		3	18	8	0	29

* According to the criteria of the American Rheumatism Association [2]:
Stage is the extent of rheumatoid progression, objective changes increasing from mild (I) to severe (IV).
Class is the functional capacity of the patient, ranging from complete activity (I) to incapacitation (IV).
Grade is the response of rheumatoid activity to therapy, ranging from complete remission (I) to complete lack of effect (IV).

Among the 29 patients, 21 showed grade I or grade II therapeutic response. In all patients treated there was some measure of improvement noted.

Four patients with severe vasospastic type of rheumatoid arthritis were able to reduce their established maintenance dosage of cortisone by taking phenylbutazone concurrently; however, when phenylbutazone was used alone, an equivalent degree of therapeutic response was not obtainable (although parenteral administration was not attempted in these four patients). Four other patients responded better to phenylbutazone than to cortisone therapy, while three more patients responded better to cortisone therapy. One patient showed a similar response to treatment with both agents.

In all instances continual administration of phenylbutazone was necessary to maintain suppression of symptoms. Thus, as with cortisone and corticotropin, there is no permanent reversal of the rheumatic state, and the erythrocyte sedimentation rates remained elevated in all cases except where grade I therapeutic response was noted.

Rheumatoid Arthritis with Psoriasis.—Eight patients with psoriasis and associated arthritis treated with phenylbutazone showed grade II and III response, as indicated in table 3. In six of the eight there was a disappearance of skin lesions.

TABLE 3.—*Response of Psoriasis with Arthritis to Phenylbutazone Therapy**

		Grade of Therapeutic Response, No. of Patients				
Stage	Class	I	II	III	IV	Total
II	II	0	2	1	0	3
	III	0	1	1	0	2
III	II	0	1	0	0	1
IV	III	0	1	1	0	2
Total		0	5	3	0	8

* Refer to table 2 for interpretation.

Rheumatoid Arthritis of the Spine (Ankylosing Spondylitis).—Among 11 patients with ankylosing spondylitis, all showed some measure of improvement, as evaluated in table 4.

Rheumatoid Arthritis with Degenerative Joint Disease.—Eleven patients with "mixed" arthritis were treated with phenylbutazone, and one of these failed to respond. The results are presented in table 5.

Other Disorders.—In six postmenopausal women with osteoporosis of the spine, phenylbutazone in conjunction with sex hormone therapy afforded major symptomatic relief. Here the degree of analgesia was superior to that obtained with salicylates and/or codeine.

In degenerative joint disease (osteoarthritis) 10 patients were treated with phenylbutazone. Three showed major improvement, three showed minor improvement, and four were unchanged. In this group of osteoarthritics, three had malum coxae senilis, and all showed improvement.

Eight patients with acute peritendonitis of the shoulder were treated, and five experienced prompt and complete relief of symptoms while three experienced partial relief of symptoms.

In single cases of the following conditions there was no improvement: Sudeck's atrophy, multiple sclerosis, herniated intervertebral disk, and periarteritis nodosa.

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2. Steinbrocker, O.; Traeger, C. H., and Batterman, R. C.: Therapeutic Criteria in Rheumatoid Arthritis, J. A. M. A. **140:** 659 (June 25) 1949.

In one case of Sjogren's syndrome (keratoconjunctivitis sicca) analgesia was achieved. In one case of Raynaud's disease, a marked warming of the extremities was experienced. Minor improvement was noted in one case of migraine and one case of nerve root pressure pain. In one case of monocytic leukemia and ankylosing spondylitis, relief of symptoms was effected, but aplastic anemia developed after a combination of x-ray and phenylbutazone therapy.

CLINICAL TOXICITY

Clinical toxic manifestations included morbilliform rash, edema, nausea, activation of peptic ulcer, vertigo, and anemia. Of the 140 patients in this series 47 had toxic manifestations. Among these 47 the medication was discontinued in 17 owing to severity of these side-reactions. The morbilliform rash rapidly dissipated with discontinuance of therapy. In several instances resumption of therapy with smaller dosage was not followed by recurrence of the rash. The edema could be reduced by limitation of sodium intake and could be dispelled by discontinuance of medication. This edema was generally refractory to treatment with mercurial diuretics. Among the 140 patients treated there was no instance of marked increase in blood pressure.

TABLE 4.—*Response of Rheumatoid Arthritis of the Spine (Ankylosing Spondylitis) to Phenylbutazone Therapy**

		Grade of Therapeutic Response, No. of Patients				
Stage	Class	I	II	III	IV	Total
II..................	II	1	2	0	0	3
III..................	II	0	0	1	0	1
	III	1	1	0	0	2
IV..................	II	0	1	1	0	2
	III	1	2	0	0	3
Total....................		3	6	2	0	11

* Refer to table 2 for interpretation.

Nausea was the most frequent untoward reaction noted, but its incidence was reduced after the provision of enteric-coated tablets. In four cases the gastrointestinal irritation was apparently severe enough to activate preexisting duodenal ulcers. Vertigo was transitory and of a mild nature. Nystagmus was not observed.

Two cases of anemia occurred during the course of phenylbutazone therapy. The first was in a 48-year-old man with long-standing, severe hypertension, previous lymphosarcoma of the rectum, previous cerebral hemorrhage, and marked osteoarthritis. During phenylbutazone therapy an unexplained massive hemoptysis developed, and subsequently the patient had moderately severe secondary anemia. The other case was in a 63-year-old man with ankylosing spondylitis and monocytic leukemia, in whom aplastic anemia developed after a combination of x-ray and phenylbutazone therapy. One month previously he had received some irgapyrin.®

Among the 140 patients treated with phenylbutazone, there was no instance of leukopenia (including the two with anemia mentioned above). Two female patients with rheumatoid arthritis previously showed definite leukopenia with irgapyrin® therapy, but their leukocyte counts remained unchanged during phenylbutazone therapy. Among 300 patients treated with irgapyrin® (to be reported elsewhere) there was one instance of agranulocytosis with recovery.

Four patients with coexisting diabetes mellitus treated in this series of patients experienced no increased insulin requirement while receiving phenylbutazone.

PHARMACOLOGIC EXPERIMENTS

Effect on the Pituitary-Adrenal Axis.—Since there was some clinical suggestion that irgapyrin® and phenylbutazone might exert effects similar to those of cortisone and corticotropin (ACTH), for example, edema and the antirheumatic activity, the matter was tested experimentally. First the possibility of direct adrenal stimulation was investigated by the ascorbic acid depletion test of Sayers, Sayers, and Woodbury.[3] Rats weighing about 100 gm., obtained from the Hormone Assay Laboratories of Chicago, were used within two days after ablation of the pituitary glands. Irgapyrin,® phenylbutazone, aminopyrine, and corticotropin were dissolved in isotonic sodium chloride solution in concentration that permitted intraperitoneal injection of 0.5 ml. per 100 gm. of body weight. Controls received injections in the same fashion, with 0.5 ml. of isotonic sodium chloride solution per 100 gm. of body weight. One hour after injection, the animals were killed by intraperitoneal injection of pentobarbital sodium, 350 mg. per kilogram of body weight. The adrenals were dissected free of fat and weighed on a torsion balance and the ascorbic acid content estimated by the method of Roe and Kuether.[4] In all cases, the floor of the skull was explored for the persistence of pituitary tissue. The results are present in table 7.

TABLE 5.—*Response of Rheumatoid Arthritis with Degenerative Joint Disease to Phenylbutazone Therapy**

		Grade of Therapeutic Response, No. of Patients				
Stage	Class	I	II	III	IV	Total
II..................	II	0	5	2	0	7
	III	0	3	0	1	4
Total....................		0	8	2	1	11

* Refer to table 2 for interpretation.

TABLE 6.—*Toxicity of Phenylbutazone*

			Manifestations of Toxicity, No. of Patients					
Disease	No. of Patients Treated	No. of Patients with Toxicity	Rash	Edema	Nausea	Peptic Ulcer	Vertigo	Anemia
Gout........................	48	16	1	5	9	0	3	0
Rheumatoid arthritis......	29	8	4	4	5	0	0	0
Psoriasis with arthritis....	8	2	0	1	0	1	0	0
Ankylosing spondylitis....	11	0	0	0	0	0	0	0
Rheumatoid and osteo-arthritis................	11	6	1	3	1	1	0	0
Osteoporosis..............	6	1	0	1	0	0	0	0
Osteoarthritis............	10	3	0	1	1	0	0	1
Peritendonitis, shoulder...	8	4	0	1	1	2	0	0
Miscellany................	9	5	0	1	3	0	0	1
Total..................	140	47	6	17	20	4	3	2

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[3] Sayers, M. A.; Sayers, G., and Woodbury, L. A.: The Assay of Adrenocorticotrophic Hormone by the Adrenal Ascorbic Acid-Depletion Method, Endocrinology **42**: 379, 1948.

[4] Roe, J. H., and Kuether, C. A.: The Determination of Ascorbic Acid in Whole Blood and Urine Through the 2, 4-Dinitrophenylhydrazine Derivative of Dehydroascorbic Acid, J. Biol. Chem. **147**: 399, 1943.

It is readily apparent that, while corticotropin significantly diminished the adrenal ascorbic acid concentration, none of the pyrazolidines did so. This would indicate that these compounds do not stimulate the adrenal cortex directly.

Table 7.—*Effect of Pyrazolidines and Corticotropin on the Adrenals of Rats Subjected to Hypophysectomy*

	Dose, Mg./Kg.	No. of Animals	Ratio of Average Adrenal Weight (Mg.) to Body Weight (Gm.)	Average Ascorbic Acid Content, Mg./Adrenal	Average Ascorbic Acid Concentration, Mg./100 Gm.*	S_D †	P ‡
Control...........	0	16	0.216	0.024	244.8 (190-305)	.....	....
Corticotropin......	25	10	0.191	0.010	106.6 (96-128)	17.24	<0.01
Irgapyrin..........	100	10	0.203	0.023	255.9 (248-273)	.....	....
Phenylbutazone...	100	6	0.203	0.022	230.4 (220-240)	.....	....
Aminopyrine.......	100	6	0.186	0.022	266.6 (263-271)	.....	....

* Parentheses enclose range of values.

† S_D, standard error of the difference between two means $= \frac{\sigma}{\sqrt{\frac{N_1 N_2}{N_1 + N_2}}}$

‡ P = <0.01: The observed difference would occur by chance less than one time in 100.

In the second experiment, intact rats (not subjected to hypophysectomy) were tested with the same procedure. As may be observed in table 8, irgapyrin® and aminopyrine effected a reduction in adrenal ascorbic acid, probably to a significant degree, whereas phenylbutazone had no such activity. These data suggest that aminopyrine may stimulate the anterior pituitary to release corticotropin, which in turn stimulates the adrenal cortex to secrete corticoids.

A third experiment, originally designed for corticotropin assay by Simpson, Evans, and Li,[5] tested the ability of phenylbutazone to maintain the adrenals of rats subjected to hypophysectomy. In this case, rats freshly operated on were given daily intraperitoneal injections of phenylbutazone, 50 mg. per kilogram of body weight, and were compared with similar animals given corticotropin and with controls treated with isotonic sodium chloride solution. Obviously, as seen in table 9, the pyrazolidine, in the dose used, did not maintain adrenal weight. This result reinforces the conclusion that the drug does not directly stimulate the adrenal cortex.

Table 8.—*Effect of Pyrazolidines on the Adrenals of Intact Rats**

	Dose, Mg./Kg.	No. of Animals	Ratio of Average Adrenal Weight (Mg.) to Body Weight (Gm.)	Average Ascorbic Acid Content, Mg./Adrenal	Average Ascorbic Acid Concentration, Mg./100 Gm.	S_D	P
Control...........	0	6	0.204	0.024	243.4 (220-265)	.....	....
Irgapyrin®........	100	6	0.212	0.018	175.1 (156-193)	16.23	<0.01
Phenylbutazone...	100	6	0.173	0.018	227.0 (212-245)	.....	....
Aminopyrine.......	100	6	0.186	0.020	189.4 (169-216)	16.96	<0.05-0.02

* See footnotes to table 7.

Effect on Brain Metabolism.—In view of the analgesic properties and the observation that large doses produce tonic-clonic convulsions in animals, it was deemed of some interest to investigate the effect of phenylbutazone on the metabolism of cerebral cortical tissue. The drug was added to slices of rat brain, respiring in Warburg flasks under the conditions described in the legend of table 10. From this in vitro experiment, it may be suggested that phenylbutazone may inhibit oxygen consumption and glucose utilization in cerebral cortical tissue. At this time no attempt has been made by us to localize the precise region of this inhibition.

Table 9.—*Adrenal Maintenance in Rats Subjected to Hypophysectomy*

	Dose Mg./Kg./Day	No. of Animals *	Average Body Weight, Gm.†	Average Adrenal Weight (Mg.)	Average—Adrenal Weight (Mg.)/Body Weight (Gm.)	S_D	P
Control..................	0	4	98.5	12.2	0.124		
Corticotropin............	5	6	97.5	16.2	0.167	0.008	< 0.01
Phenylbutazone.........	50	5	93.6	11.8	0.126		

* Number at end of experiment. In each group there were six rats at the beginning.

† Weight at end of experiment.

Table 10.—*Effect of Phenylbutazone on the Respiration of Rat Cerebral Cortex Slices**

Concentration.............	0	1×10^{-3}	1×10^{-2}	5×10^{-2}
QO_2........................	11.72	10.31	5.21	0.94

* QO_2 = microliters of oxygen consumed per hour per milligram (dry weight). The medium was buffered Ringer's phosphate, with glucose, 1×10^{-2}, adjusted to pH 7.35. Respiration was observed in Warburg manometers at 37.5 C. Phenylbutazone was added directly to the medium in all cases.

Trials in Experimental Polyarthritis of Rats.—Experimental polyarthritis of rats may be readily reproduced by intraperitoneal injection of the L_{-4} strain of pleuropneumonia-like organism. This experimental arthritis may be prevented or cured by the use of gold salts. Although this experimental arthritis is not the same process as rheumatoid arthritis in man, it has served as a method for making chemotherapeutic trials of many agents and for comparison of them with gold in the prevention and cure of this experimental infection.[6]

In five separate experiments involving 337 albino rats, irgapyrin® was given intramuscularly and in the drinking water. An evaluation was made both of the preventive and the curative effect of irgapyrin® in this experimental polyarthritis. In rating the effect the percentage incidence of arthritis in each group, the percentage survival rate, and the extent of joint involvement (rated numerically on an "arthrogram") were considered.[6] Generally the percentage incidence of arthritis was slightly more in medicated than in control groups, and the percentage survival was slightly less in three and slightly more in two experiments. The degree of difference was within the normal variation among groups of untreated infected controls.[7]

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[5] Simpson, M. E.; Evans, H. M., and Li, C. H.: Bioassay of Adrenocorticotropic Hormone, Endocrinology 33:261, 1943.

[6] Kuzell, W. C., and Gardner, G. M.: ACTH, Pregnenolone, Glutathione, and Gonatropins in Experimental Polyarthritis, Stanford M. Bull. 8:83, 1950. Kuzell, W. C., and Mankle, E. A.: Cortisone Acetate and Terramycin in Polyarthritis of Rats, Proc. Soc. Exper. Biol. & Med. 74:677, 1950.

When aminopyrine was given in the diet (0.25%) in two experiments, each involving 20 albino rats, the extent of joint involvement was less, and the percentage incidence of arthritis and rate of survival the same as for the controls. Phenylbutazone, on the other hand, when tried as a preventive (20 test and 20 control rats) in a similar fashion effected a general worsening of the disease as measured by the three criteria.

Changes in the Blood.—In the rats with experimental arthritis receiving irgapyrin,® total eosinophil counts were made in the five separate experiments during treatment, and there were no consistent differences from the controls. Likewise, the use of aminopyrine alone did not change the total eosinophil counts of these infected rats.

In the evaluation of the experimental arthritis the infected animals receiving phenylbutazone and aminopyrine as well as their controls were observed for four months. Those receiving phenylbutazone were given 0.25% in the drinking water, and those receiving aminopyrine were given 0.25% in their diet (ground purina® laboratory chow). At the end of the experiment there were no consistent differences in total white cell counts or erythrocyte counts.

The average body weights of males and females receiving aminopyrine were the same as their controls at the end of four months, but the average weights of those receiving phenylbutazone were 222 gm. for the males and 159 gm. for the females, as compared with 265 gm. for the male and 186 gm. for their controls.

COMMENT

Phenylbutazone apparently is capable of producing the beneficial clinical effects previously noted by many European clinicians using irgapyrin® in various rheumatic disorders. Since the symptoms of rheumatoid arthritis return within four to seven days in most instances after discontinuance of the use of phenylbutazone, its action, like that of cortisone and corticotropin, is probably merely suppressive. The analgesic properties of phenylbutazone are excellent; particularly in early and acute cases there is a marked decrease in joint swelling and muscle stiffness suggesting a more general antirheumatic effect. There is also a generalized feeling of warmth of the extremities, which is probably due to peripheral vasodilatation. Its beneficial action in acute exacerbations of gout and in chronic gouty arthritis exceed the benefits previously experienced by these patients receiving the conventional therapy with mixtures of salicylates, colchicine, and glycine plus the low-purine diet. The prompt decrease in serum uric acid in gouty patients is apparently a specific effect. The clearing of the psoriatic skin lesions of the patients receiving phenylbutazone for the associated arthritis is deserving of further study.

The toxicity of phenylbutazone is not great. Among the 140 patients studied for one to five months in this group, there was no instance of leukopenia, in spite of the fact that the drug is a member of the pyrazole series. The decrease in erythrocytes and platelets that occurred in a patient with monocytic leukemia may have been due to the concurrent x-ray therapy or to the disease itself. In the patient with marked hypochromic anemia there had been marked hemoptysis and a previous history of lymphosarcoma. In view of the occurrence of anemia in these two patients while receiving phenylbutazone, great caution must be exerted in studying the blood of all patients receiving this agent. In patients over 60 years of age, more than usual caution should be observed in the use of phenylbutazone, because of its tendency to promote sodium retention and edema. This can usually be controlled if these patients are placed on low-sodium diets.

The most serious side-effects of phenylbutazone therapy that were encountered in this series were the four instances of activation of preexisting peptic ulcers. If the drug must be used in such patients, the concurrent use of antacids is advantageous, and perhaps parenteral administration is to be preferred, although in one instance we observed activation of the ulcer during intramuscular administration of the phenylbutazone.

Certainly the most facile mode of administration is by mouth, but the intramuscular administration of the phenylbutazone is effective and perhaps worth while until the desired clinical effect is established. There is some pain at the injection site, but we observed no abscess formation.

The experimental results in albino rats indicate that phenylbutazone apparently does not act on the pituitary-adrenal interrelationship as do cortisone and corticotropin. There is neither a decrease in adrenal ascorbic acid nor a decrease in total eosinophil counts following its use in intact albino rats and those subjected to hypophysectomy. The Warburg studies were suggestive that phenylbutazone may inhibit oxygen consumption and glucose utilization in cerebral cortical tissue. There was a worsening of the experimental polyarthritis of rats after its use intramuscularly and by mouth, as was also previously noted after the use of corticotropin and cortisone.[6] Among the animals there was no change in the leukocyte, eosinophil, or erythrocyte counts of the rats receiving phenylbutazone for four months.

SUMMARY

1. Phenylbutazone (butazolidin®), a pyrazole derivative, was evaluated in 140 patients with gout and a variety of rheumatic disorders. In 48 patients with acute and chronic gout there was improvement in all instances, accompanied by a lowering of serum uric acid. In rheumatoid arthritis a suppressive effect was noted in all instances, but there was a prompt return of symptoms four to seven days after discontinuance of medication. In ankylosing spondylitis, rheumatoid arthritis with psoriasis, and rheumatoid arthritis with degenerative joint disease, there was also a beneficial clinical effect noted.

2. The clinical toxic manifestations of phenylbutazone include rash, edema, nausea, activation of peptic ulcer, vertigo, and pain at the site of injection. It may be given by mouth or intramuscularly. The toxicity is of a low

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[7] To be reported in detail elsewhere.

order, being present in 47 of 140 patients studied and requiring discontinuance of therapy in only 17. Two instances of anemia were noted where other causes may have been responsible.

3. Experimental studies in albino rats showed that phenylbutazone does not alter the "pituitary-adrenal axis," nor does it produce changes in the blood picture. It does cause some inhibition of oxygen consumption and glucose utilization in cerebral cortical tissue. Like cortisone and corticotropin, its use in experimental polyarthritis of rats is followed by a worsening of the disease process.

INCIDENCE OF HEART DISEASE IN MASS X-RAY SURVEYS

Bernard Schwartz, M.D.
and
Bernard Berman, M.D., Cincinnati

At the present time no satisfactory figures are available concerning the incidence of heart disease noted in mass roentgenographic surveys of the chest conducted throughout the nation. In order that information on this subject might be secured a pilot project was started in 1949.

Maclean and Rogen of Glasgow reported data on such a survey, but their patients were in the younger age groups.[1] The report by West [2] did not include actual measurements of heart size. Edward's report [3] dealt with a predominantly Negro population, and no definite heart measurements were recorded. Many other reports were noted in the literature, but no accurate data in regard to heart disease were recorded.

METHODS AND MATERIAL

The present report was made possible when the Cincinnati Antituberculosis League and the Cincinnati Health Department made examinations of the chest x-rays of 10,549 persons in the early part of 1949. There were 486 (4.5%) who showed some abnormality of the cardiac silhouette on the roentgenograms. The abnormalities consisted of enlargement of the heart, abnormal configuration of the heart, or a distorted aortic shadow. From this group with abnormal roentgenographic heart shadows, 207 (42.6%) were selected at random and given complete physical examinations. There were 170 (82%) persons whose private physicians had to be interviewed. These visits to the family physician and arrangements for appointments were made by the public health nurses of the Cincinnati Health Department. The following procedures were carried out: a thorough social and medical history; physical examination, including repeated blood pressure readings; fluoroscopic examination with the use of barium, when indicated, for the determination of chamber enlargement; 6-ft. roentgenogram; electrocardiogram; urinalysis; Wassermann test; and hemoglobin determination.

Each patient was then informed of the pertinent findings of his examination and urged to return to his physician, to whom a complete report was mailed. Most of the persons examined were in the middle and upper age levels: 13 (6.3%) were between 15 and 30 years of age; 58 (28%) were between 30 and 50; 121 (58.4%) were between 50 and 70; 13 (6.3%) were between 70 and 80; and 2 (1%) were between 80 and 90. One hundred thirty-three were white, and 74 were Negro. Some had no physicians, and few attended some free dispensary. The majority were engaged in earning a living. Many of the women were doing housework. Only 44 (21%) of them consulted their private physicians after being informed of the findings in the initial roentgenogram. Flancher [4] reported a similar percentage in his study of high school students.

The criteria for the diagnoses of organic heart disease were those established by the American Heart Association. Patients considered to have possible or potential organic heart disease were classified as having "no organic heart disease." Those with blood pressure levels of 150/100 or above were classified as having arterial hypertension. The heart size was determined by the use of the formula of Hodges and Eyster, applied to the teleroentgenogram. The term "cardiac enlargement" indicated a heart shadow that was more than 10% greater than normal width according to this formula.

OBSERVATIONS

Of the 207 patients examined, there were a total of 177 (80%) who had definite organic heart disease. Of the 177 patients, 91 (52%) stated they had "heart trouble." Eighty-six professed ignorance. In this latter group, evaluation of the patient's history was rather difficult to make, because many would contradict themselves by remarks signifying that they were aware of the presence of "high blood pressure" or an "enlarged heart." Twenty-two of the 177 had congestive failure of varying severity.

Of the 177 patients with organic heart disease, 117 (68%) had hypertension (blood pressure higher than 150/100). Seventy-five of the 117 were obese; only 10 had hypertension alone, without other abnormalities; and the remaining 107 had additional abnormalities, such as cardiac enlargement, widened aortic shadows, abnormal cardiac configuration, or abnormal electrocardiographic changes. Of the 177 patients, 98 (57%) were obese. The most frequent complaint of this obese group was fatigability.

From the Max Stern Heart Station, operated by the Cincinnati Health Department.

[1] Maclean, A., and Rogen, A.: Mass Miniature Radiography in the Detection of Heart Disease, Brit. Heart J. **11**: 264, 1949.

[2] West, H. F.: Heart Disease in the Case-Finding Program, Am. Rev. Tuberc. **54**: 465, 1946.

[3] Edwards, H. R.: Tuberculosis Case-Finding: *Studies in Mass Surveys*, Am. Rev. Tuberc. (supp.) **41**: 3, 1940.

[4] Flancher, L. H.: Case Finding in Iowa: Report on Statewide Clinics and Mass X-ray Surveys, Am. Rev. Tuberc. **57**: 375, 1948.

There were 55 (31%) patients who had cardiac enlargement. Thirteen of these had normal blood pressure levels, six of whom manifested no other abnormal physical or laboratory findings, i. e., the electrocardiogram and blood pressure were normal. Cardiac enlargement in the obese was difficult to determine with any degree of accuracy, except with the formula of Hodges and Eyster. This formula is one of the two methods in common use for determination of heart size. There were 23 patients with calcification in the aortic knob, 22 of whom had additional cardiovascular diseases; eight patients had aortic aneurysms. Four of this latter group had positive Wassermann reactions.

The electrocardiogram in 62 (35%) patients showed definite abnormal patterns. Of these, 16 had evidence of old myocardial infarction, 9 auricular fibrillation, 3 well-defined bundle branch block, 3 prolongation of the intraventricular conduction time, 4 prolonged auriculoventricular conduction time, 21 left ventricular preponderance, 4 right ventricular preponderance, and 2 low voltage complexes. One of these two had myxedema.

There were 53 patients under 40 years of age. In this group, 10 (19%) had rheumatic heart disease, whereas in the group between 40 and 60 years the incidence was only 5%. There was no clinical evidence of rheumatic fever activity in any of the patients, although sedimentation rates were not determined, for obvious reasons. The high incidence of rheumatic heart disease in the younger age group would appear to confirm the belief that the life span of patients with rheumatic heart disease is short.

There were a number of incidental findings, including glycosuria; four patients had definite evidence of sugar and seven had a trace. The Wassermann reaction was positive in 16 patients (12 Negro and 4 white). Of these, three had aortic insufficiency and four had aortic aneurysms. Three patients had thyroid disease, one with extreme myxedema and two with hyperthyroidism. Two patients had congenital heart disease.

COMMENT

It was extremely interesting to us to note the vital interest and appreciation manifested by almost all these patients, in contrast to the usual apathy of the average clinic patient. The patients had meager information concerning their physical condition, and the anxiety present, particularly in those with hypertension, was evident. Few had any comprehensive understanding as to how to cope with their defects. For instance, a great majority of the hypertensive persons were obese, and they did not appreciate the relationship of obesity to hypertension. Many of the patients who complained of diminished cardiac reserve were not aware of their heart disease and were engaged in moderately strenuous occupations.

One can predict with a fair degree of certainty that, had the entire group of 486 patients with abnormal cardiac shadows been examined, a similar percentage of organic heart disease would have been found. One must remember that the patients who were examined were not selected, but were taken at random. One might further conclude that, among the adult population in Cincinnati of some 500,510 persons, there are approximately 20,000 who have organic heart disease and most of these would be in the older age bracket.

SUMMARY AND CONCLUSIONS

One hundred seventy-seven of the 207 patients examined, or 80%, had some form of cardiovascular disease. Of the 177 patients, 117 had hypertensive heart disease; 10 had hypertension alone, and 17 had rheumatic heart disease. Fifty-five had cardiac enlargement, and eight had aortic aneurysms. Sixty-two patients had well-defined electrocardiographic abnormalities (borderline abnormalities were excluded). Ninety-eight were obese. Fatigability was the most prevalent complaint, particularly among the obese. Forty-eight per cent did not have definite knowledge of heart involvement; 52% had knowledge of their heart condition. Previous to this pilot study only a few of the patients consulted their private physicians when informed of the heart abnormality seen in the chest x-ray.

This pilot project consumed over 1,000 hours of the collected efforts of the clinic staff for the 207 patients. An average of five hours was devoted to each patient. One can readily see that this type of service is expensive. However, the incidence of heart disease in this pilot project is so significant that some type of follow-up is imperative. We have recommended that the trained field personnel of Cincinnati Health Department be utilized to visit those persons who exhibit abnormal heart shadows in mass x-ray surveys and to urge them to see their physicians for a thorough cardiovascular examination.

904 Carew Tower.

Nonvenereal Treponematoses.—In the United States and Western Europe, we think of syphilis as a venereal infection. In many countries, however, infection with the germ of syphilis (Treponema pallidum) is widespread among children, transmitted through nonsexual personal contact, eating utensils, and perhaps by insects. This form of the disease is called "bejel" in the Middle East and "njovera" in Rhodesia. In Iraq, a million people are believed to be affected by bejel.

Furthermore, there are two other widespread diseases, disseminated in this same way by nonsexual contact, largely among children, which are caused by species of treponemas distinct from T. pallidum. These are "pinta" which is endemic in many parts of Central America (caused by *Treponema carateum*); and "yaws" which is widespread and prevalent in South America, Africa, the Far East, and in the Western Pacific area (caused by Treponema pertenue). Guthe and Reynolds believe that the total burden of nonvenereal *treponematoses* is fully equal to that imposed by venereal syphilis.

Serological studies show the close relationship between diseases caused by all three treponemas; and all three are highly susceptible to treatment with penicillin. . . . The results of mass treatment programs carried out in many countries have been phenomenal. In a demonstration carried out on endemic syphilis in a village in Yugoslavia, every single case of infection was discovered and treated. After a 10 month period not a single new case had occurred. In Haiti, where yaws is widely prevalent among the rural population, from 35,000 to 50,000 persons have been treated monthly in a campaign sponsored by the World Health Organization and the United Nations International Children's Emergency Fund. It has been estimated that by this single program 100,000 incapacitated persons have been returned to work, increasing the national production by five million dollars' worth a year.—Editorial, A Decade of Penicillin, *American Journal of Public Health and the Nation's Health,* March [illegible]952.

WORK OF COMMISSION ON FINANCING OF HIGHER EDUCATION

Laird Bell, Chicago

The Commission on Financing of Higher Education is a private agency sponsored by the Association of American Universities and created to study and report on the present situation in meeting the financial needs of higher education in this country. Our three year study was made possible by grants from the Rockefeller Foundation and the Carnegie Corporation of New York. Our final reports, to be issued some time this year, are addressed to all those interested in the well-being of American higher education. Our commission is made up of 12 men, 8 of whom are university administrators and 4 of whom are laymen who are serving on boards of trustees.

The Survey of Medical Education, conducted by a survey committee sponsored by the Council on Medical Education and Hospitals and the Association of American Medical Colleges, is interested in more than costs. The commission has met with the survey committee, and the staffs have consulted with one another. Both organizations approach the problem of financing higher education with the same concern and the same hope for the future, but our point of view is somewhat different. The survey is concerned with the quality of medical education in this country and with its adequate financial support. We are concerned with the financial well-being of higher education as a whole and in all its branches, including some 1,500 institutions of higher education. The survey concerns 72 four year medical schools, of which 63 are part of universities, more than half of which are privately supported. Approaching the problem from the point of view of financing higher education as a whole, we have found that the major problem, in state-supported and privately supported schools alike, is financing medical education.

The Surgeon General's Committee on Medical School Grants and Finances has endeavored to develop the concept of a "deficit," to indicate the extent to which the general funds of a university are being drained for medical education, and has concluded that the deficit in 1948 was $7,700,000. Our research staff has not accepted this deficit concept, but it has made a sample study of 18 public and 18 private universities. The study indicates that medical schools usually accounted for a larger proportion of instructional expenditures than any other professional school, while the proportion of medical students to total students was very small. For example, in 11 privately supported universities the medical school spent from 20 to 38% of the total instructional budget, while it contained only 6 or 7% of the student body, and the disproportion in the publicly supported institutions was at least as great. The figures of the Surgeon General's committee can be criticized, as can the commission's or any other such agency's, but all of the studies indicate clearly that medical schools are the central problem in financing higher education. This is not to say that medical education should not continue to be the best education that money can make it. It should have more support rather than less. Since medical schools function best as part of universities and since they should not drain the rest of the institution of its resources, higher education as a whole should have more support rather than less.

The Commission on Financing of Higher Education issued a statement on financing medical education in May, 1951, because they strongly believed that university presidents, trustees, medical deans, the medical profession, business corporations, and the public in general must recognize promptly that there is a major problem. Instead of quarreling over the niceties of statistical method, all groups should cooperate in informing the public that both medicine and higher education need support. It is appalling that the American public knows so little about the financial needs of medical education, that the medical profession itself seems to know or care so little about these needs, and that American business corporations seem so little interested in them.

Two years ago a group of distinguished men organized the National Fund for Medical Education for the support of all medical schools. They believed that business would recognize its interest in medical education and would welcome the opportunity to contribute to a single fund that would be distributed by a disinterested and well-informed board where it would do the most good. The response up to now has been half-hearted. Business as well as the general public must have the need brought home to it with increasing insistence.

Where is this money to come from? That is the basic question the congress and the commission must answer. But first let me say a word about economy. Our commission declared in its statement of May, 1951, that medical schools "can and should economize." This declaration has been subjected to some public criticism, which, of course, was to be expected. But the criticism has seemed somewhat unfair, because the quotation was lifted out of context. In all our study we have been concerned with possibilities of economy in every phase of college and university work. More will be said about this in our final report. We have pointed out possibilities of economy in other areas besides medical education, but on the basis of the evidence before us we were not willing to say that medical education contains no waste effort or has no practices that might be performed more cheaply. The commission is inclined to think that medical faculties and the medical profession have not been sufficiently cost conscious in developing their medical curriculum and their teaching techniques. Is there, for example, the maximum possible use of laboratories and other expensive equipment? Is there no unnecessary instruction in the preclinical years? The evidence at least justifies doubts; however, we did not suggest that economies should be realized by cutting faculty salaries, decreasing research budgets, or lowering in any other way the standards of medical education. Economies are a matter of unceasing detailed study, such as reexamination of ac-

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Read before the Forty-Eighth Annual Congress on Medical Education and Licensure, Chicago, Feb. 11, 1952.

Member, Commission on Financing of Higher Education, and Chairman, Board of Trustees, University of Chicago.

cepted practices to eliminate unessentials. The commission believes that medical faculties as well as their harassed deans must be more cost conscious than ever before; however, we ended our section on economy with these words: "At the same time economies alone cannot provide all the present financial needs of medical education. High quality medical education will remain costly, and those costs must be met."

We have suggested several possibilities for increasing the income for medical schools. First, we suggested increasing charges for the medical service rendered patients and, especially, transferring patient care and even medical care from university and hospital budgets to welfare and private insurance budgets; second, we believe that medical schools should insist that research grants bear the full cost of research activities. I do not understand why medical deans are willing to ask for educational grants from the federal treasury but are not willing to stand up and demand full payment of overhead on Public Health Service research grants. They should oppose grants that do not cover the full cost of the research activities involved. More than this, willingness to accept the 8% indirect cost allowance has threatened to undermine the whole structure of federal government overhead payments on research contracts. Only by the most concerted stand did university presidents a year ago persuade the Atomic Energy Commission not to limit its indirect cost payments to 8% of direct project costs. The commission staff has figured that if medical schools and their universities received the full overhead costs on federally sponsored research they would receive over 6 million dollars in additional income. Perhaps if we clamor loudly enough, we will stand together enough to get results. Instead of asking the federal government for new legislation and new funds, why not ask it to appropriate and pay out the amount needed to take care of the full costs of the research it already promotes?

Third, the commission considered student fees. We do not desire to see an increase in student charges; but, if medical scholarship funds can be increased, if inflation continues rampant, and if incomes of families continue to be more evenly distributed at higher levels of real purchasing power, there are justifiable reasons for increasing student fees.

Fourth, we believe that more income can and should be received from gifts—gifts from alumni of medical schools, corporations, foundations, and friends. The era of giving, especially current giving, has not ended. Indeed, our statistics indicate that gifts for current operating purposes are increasing throughout higher education as a whole. If the American Medical Association can realize its goal of persuading practicing physicians to contribute on the average of $100 a year to the nation's medical schools, those schools would receive nearly 18 million dollars of new income. The Association has made a start in that direction, and we hope they will keep up the good work.

Fifth, more money must be appropriated by state legislatures to state universities for medical education, but without subtracting the increase from the funds available for other educational activities.

Finally, there is the matter of federal government subsidy of instructional costs. The Association of American Medical Colleges, or at least most of its deans, are on record in favor of the kind of federal legislation embodied in Senate Bill 337 of the 82d Congress. On one occasion the presidents in the Association of American Universities endorsed federal government financial support of medical instruction. The commission has considered this issue at length. Our conclusion was that we could not approve such a measure at this time; this decision was unanimous, despite the fact that some of us were under pressure from our own deans. Our objection is to a direct federal subsidy. We do not want medical schools to be so involved with the federal government as to be dependent on it.

It is true the federal government is already making substantial sums available to higher education today in various ways, but we do not regard this as dangerous. First, there is scholarship and fellowship money given directly to individual persons. Withdrawal or arbitrary handling of these funds would be harmful to the persons but not fatal to the schools. There are also research grants and contracts. Here the university can, theoretically at least, take it or leave it, though sight should not be lost of the danger of becoming dependent on the support when it has been repeatedly given.

With the preceding two types of federal aid, the schools can presumably protect themselves if they have at least some other substantial means of support, but a direct subsidy is different in principle. It is in the nature of a subsidy, if it amounts to anything, that the recipient becomes dependent on it. Future plans and commitments inevitably assume a continuance of it, and the greater the subsidy the greater the dependence. Governments change, policies change, and formulas of distribution can change. Conceivably, policies may turn against schools specializing in research, as compared with those turning out large numbers of physicians; or the better schools may be penalized because they are considered to have standards that are too high or because they are thought to be too restrictive in their entrance requirements. Congressional favor may be turned against state-supported or against privately supported schools. None of these things may happen, but do we want deans looking furtively over their shoulders all the time to see whether they may offend some public or political interest?

Grants from the government have so far been commendably free of government dictation. Even the land grant colleges, which have been receiving grants for 90 years, insist that there has been little governmental interference with their activities. But it is axiomatic that in the end he who pays the piper calls the tune.

It is to be remembered, too, that in the numerous cases in which the medical school budget draws on the general university budget it is the whole university that is affected by dependence on a medical school subsidy. The whole institution is involved as much as the medical school. It is not, I believe, too fanciful to suggest that political judgments as to whether an institution is too radical, or not radical enough, may affect congressional or bureaucratic attitude toward the school as a whole, with obvious repercussions on medical education.

There are places today where evolution may not be taught. Do we want to run the risk of having an official line in science? Hitler insisted there was such a thing as German science, which was not to be defiled by contact with the outside world, and German medicine stood still for 12 years. Russian professors must accept the Lysenko line in genetics today. Granted that these events are unlikely with us, nevertheless, why take the first step in making them possible—at least until all other possibilities of support have been exhausted?

There seem to be a number of persons who do not approve of socialized medicine. I wonder whether, in asking federal aid at the school level, we are not inviting the camel to put his head into the tent. If I were a dictator intent on getting control of the profession, I think I should begin at the school.

Even though these fears may be thought exaggerated, there is good reason for first exhausting all other possibilities of support. Perhaps the most important single idea the commission has developed in the course of its work is an appreciation that the great strength of our system of higher education lies in the diversity and variety of our colleges and universities. This diversity reveals itself in different types of control, public and private; it reveals itself in different types of organization, colleges, universities, and separate professional schools; it reveals itself in different types of instructional emphasis, in different types of clientele, in different types of location; it reveals itself equally in a wide variety of sources of support.

This diversity exists in medical education. The Council on Medical Education and Hospitals has done a fine job in developing and demanding certain minimum standards of professional education. But this has not eliminated great differences in medical schools—and fortunately so. Some are primarily centers of medical research, some are primarily centers of instruction for the general practitioner or for service to a particular area of the country, some are centers of highly specialized work in a few fields, and others combine these various phases in many different combinations. It takes this variety to meet the educational needs of this country, and medical schools appropriately have highly diversified sources of support as well. We should be slow to permit federal support, and the standardization that might well follow it, to become the dominant factor in our medical school income.

We hear a good deal about "the American way." I have wondered lately whether the American way is still that rugged independence that we like to attribute to our ancestors or whether it has come to mean dashing out and buying a ticket to Washington, with a letter to the congressman.

The commission's position remains that it cannot, in good conscience, endorse federal subsidy of medical instruction while it is still uncertain that states and private sources of support cannot do the job. We agree that medical education needs more income and needs it now. The medical profession, corporations, foundations, individual persons, and state governments all have a stake in it.

135 S. La Salle St.

MICROTESTS FOR CHOLINESTERASE

INTERPRETATION AFTER NERVE GAS OR AGRICULTURAL INSECTICIDE EXPOSURES

John F. Marchand, M.D., New York

Widening agricultural requirements for anticholinesterase insecticides that represent a potential health hazard, and parallel diagnostic problems that will arise if the new anticholinesterase war gases are used have created the need for an objective clinical test applicable in field surveys and in differential diagnosis for individual patients. The symptoms of anticholinesterase intoxication, whether resulting from exposure to insecticides or nerve gases,[1] may appear too late to provide an adequate warning, or may be too nonspecific to serve in all instances as an accurate and timely guide to definitive diagnosis. For the benefit of commercial spray operators and of others possibly exposed to anticholinesterase chemicals, a micro-blood-sampling method was used in the summer of 1951 by several United States and Canadian health agencies. The procedure minimized the labor of screening studies, because it required no syringes and needles for venipuncture and permitted shipment of capillary rather than test tube size blood samples. Regularly scheduled capillary blood sampling proved to be a convenient and readily accepted routine for groups receiving this final specific check on the over-all effectiveness of protective methods for prevention of accidental inhalation or skin absorption.

The effects of such absorption are insidious and progressive prior to the appearance of recognizable symptoms such as nausea, vomiting, diarrhea, sweating, salivation, and muscular fasciculations. Neither the early symptoms nor some of the late ones are sufficiently specific to be diagnostic. The evidence of a chronic or acute absorption is easily obtainable, however, by an assay of the cholinesterase activity of the red cells and plasma, either before or after symptoms have appeared. Cholinesterase tests on the red cells and plasma have proved specific and reliable as a basis for establishing or excluding the diagnosis of significant intoxication by anticholinesterase chemicals.

A variety of groups have been tested for evidence of risks or carelessness that might in time lead to acute poisoning. Personnel actually undergoing dangerous exposures in citrus groves, apple orchards, or other field work, as well as in chemical processing plants, have been identified and warned in time to prevent actual symptoms or injury. The consideration of an acute or chronic intoxication by an anticholinesterase crop protection chemical has been excluded where illness from other causes has occurred among persons who handled or had possible exposures to a phosphate ester insecticide. Where protective routines have been inadequate, evidence has been assembled defining the extent of the hazard.

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[1] Rohwer, S. A., and Haller, H. L.: Pharmacology and Toxicology of Certain Organic Phosphorus Insecticides: General Description of Their Activity and Usefulness, Council on Pharmacy and Chemistry, J. A. M. A. 144:103-108 (Sept. 9) 1950. Health Services and Special Weapons Defense, AG-11-1, United States Government Printing Office, December, 1950, pp. 29-33.

Micro-blood-samples provided specimens suitable for assay by the manometric cholinesterase method of Ammon [2] or the electrometric adaptation of this method by Michel.[3] Specimens collected in this manner may also be used for microhematocrit determinations, and for other routine clinical tests applicable to blood samples of 0.10 ml.

METHOD [4]

Glass capillaries 2 by 100 mm. in size, as commonly used for melting point tests, are obtainable in packages of 100. These capillaries are dipped in heparin (approximately 10 mg. per milliliter) and dried slowly in a gentle air stream to leave a coating of anticoagulant within the capillary. Blood from a fingertip,[5] collected as for a blood count, is allowed to flow into a heparinized capillary and fill it almost to each end. The ends of the capillary are cautiously flamed or sealed with paraffin, and the sample is labeled with tape. These capillary samples may be inserted in ⅜ by 4¼ in. (1 by 11 cm.) butyl acetate tubes for protection against breakage during shipment. Although leukocytes tend to make the specimens self-sterilizing, the samples are packed with chipped ice in a thermos bottle if summer extremes of temperature are expected, or if more than a day may elapse in transit. They are centrifuged (2,500 rpm for 30 minutes) as soon as practicable, preferably before shipment. This packs the red cells at one end and the plasma at the other. They may be iced for a week or more without significant change in cholinesterase activity of the red cells or plasma. Directly from the capillary, after it has been cut at both ends and at the red cell and plasma junction, 0.02 ml. of plasma is drawn and measured in a Sahli type hemoglobin pipette and washed into 1 ml. of Michel's plasma buffer.[3] By the same technique an equal volume of packed red cells is drawn and measured and washed into approximately 1 ml. of 0.9 isotonic sodium chloride solution. The red cell sample is centrifuged; all but an estimated 0.02 ml. of the overlying saline wash is aspirated away with fine glass suction tip, and replaced by 1 ml. of saponin solution and 1 ml. of Michel's red cell buffer.[3] The cholinesterase activity of each is determined as proportional to the pH change at constant temperature following the addition of an excess of acetyl choline substrate.[3] The use of capillary specimens has abbreviated the routine and added to the accuracy of the electrometric procedure.

INTERPRETATION

The cholinesterase activity of the red cells and plasma varies within limits around a normal average taken as 100%. This variation in no way hampers the reliability and consistancy with which real changes or profoundly depressed values can be interpreted. It does make preliminary control observations extremely helpful in the interpretation of relatively small variations resulting from minor exposures. The usual day to day fluctuation tends to be around 1 or 2%. Person to person variations may reach + or —20% for the red cells and +100% or —20% for the plasma.

Red cell cholinesterase values have shown no alteration with anemias or other disease states. A drop of 10% or more below the normal average is likely to be significant. Low plasma activities other than as affected by anticholinesterase chemicals have been reported only with low values for plasma proteins, as in the terminal stages of cirrhosis or metastatic liver disease. Red cell and plasma cholinesterase activities in the normal range are therefore rather strong evidence against any severe acute or chronic poisoning by an anticholinesterase chemical. Low plasma values, such as 40%, when found in association with normal red cell values, indicate a mild poisoning within the preceding few hours or days. Low red cell activities in association with normal plasma activities indicate a less recent exposure, one which has occurred within the preceding weeks. In the latter case there has been adequate time for regeneration of the enzyme in the plasma, a rapid process, but not rapid enough for the relatively slow process of replacement of active enzyme in the red cells. Very low values for both red cells and plasma, such as 20% or less, indicate a severe acute poisoning. Allowing for a very small measure of nonenzymatic hydrolysis of acetyl choline substrate, all percentages in the range approaching zero may be taken as representing virtually complete inactivation of the cholinesterase-pseudocholinesterase enzyme system. No distinction need be made between the "true" cholinesterases (specific for acetyl choline) and "pseudo" cholinesterases (enzymes also active in the hydrolysis of other esters).

Following repeated small exposures the activity of the red cells may be more profoundly depressed than that of the plasma. The rate of cholinesterase replacement of this enzyme within the nervous system and the red cells is slow enough to permit additive effects from sufficiently frequent small exposures, such as day to day exposures. Furthermore the effects of absorption of more than one of the irreversibly acting anticholinesterase agents must be taken as additive. Red cell activities below 80 to 90% indicate probable previous absorption of an anticholinesterase compound, and activities below 50 or 60% of normal indicate a dangerous level of absorption even if no symptoms have appeared.

Being less variable than the values for plasma, and slower to return to normal, the red cell activities are most frequently informative. However both values together are so useful, and so easily determined from a single drop of blood from the finger tip, that it becomes false economy to omit either one or the other. The determination of each is parallel. Once the water bath and pH meter are set up, most of the labor and expense is in the collection and shipment of specimens rather than in the actual analysis.

Plasma cholinesterase activity is depressed more quickly and more profoundly than that of the red cells, and reverts to normal more promptly. Following inactivation by one of the well-studied irreversibly acting cholinesterase inhibitors, such as diisopropyl fluorophosphate, parathion, or tetraethylpyrophosphate, the reported average rates of recovery of the cholinesterase in the red cells are the same, 1% or 2% a day, or approximately at the rate at which new cells are formed. There is slightly more rapid rebound over the first day or two. Full recovery may take three months. In the plasma about 40% of the lost activity is recovered in the first five days and the remainder within three weeks. Since the values for red cells and for plasma may deviate widely from one another, neither may be used as a check on the other. Tests on whole blood for cholinesterase activity are misleading or impossible to interpret except in cases of severe acute poisoning extreme enough to cause an immediate profound depression of each.

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[2] Ammon, R.: Die fermentative Spaltung des Acetylcholyns, Arch. ges. Physiol. **233**: 46, 1936.

[3] Michel, H. O.: An Electrometric Method for the Determination of Red Blood Cell and Plasma Cholinesterase Activity, J. Lab. & Clin. Med. **34**: 1564-1568, 1949.

[4] Capillary blood samples airmailed from New York to Los Angeles had red cell and plasma cholinesterase values on arrival that checked with those obtained in New York.

[5] Walter, C. W.; Murphy, W. P., Jr., and Comploier, F. C.: Sterile Lancets for Blood Sampling, J. A. M. A. **148**: 845-846 (March 8) 1952.

For groups regularly screened for red cell and plasma cholinesterase inhibition, the extent that the average red cell and plasma activities fall below preexposure tests may be used routinely as a current index to the need for closer protection against carelessness or unsafe practice. No effect other than cholinesterase inhibition of the irreversibly acting cholinesterase inhibitors, in amounts up to those sufficient to cause death, have been found. Measurement of this enzyme blocking action is therefore the only determination that appears to be of practical importance as a gage of the effectiveness of measures directed against accidental poisonings. Urine tests for metabolic end products, while of interest as research tools, have been laborious and impossible to correlate closely enough with the enzyme-blocking action to justify application to routine screening work.

SUMMARY

Cholinesterase testing of the red cells and plasma appears to be a specific and reliable method of establishing or excluding significant intoxication by one or more anticholinesterase insecticides or war gases. Collection, shipment, and testing of blood specimens in heparin-dipped glass capillaries enhances the accuracy and convenience of the electrometric cholinesterase method. These specimens are also convenient for hematocrit readings or other determinations applicable to 0.1 ml. blood samples. Separate cholinesterase assays of red cells and plasma, when compared with averages or preexposure controls, permit recognition of the additive effects of repeated absorption of small amounts, and differentiation of chronic from severe acute exposures. Low plasma values indicate a mild acute poisoning. Low red cell values together with normal values for the plasma indicate a recovery stage from a previous acute or repeated exposure. Low values for both indicate a severe acute intoxication. Cholinesterase microtests have been of diagnostic value in individual cases in which the symptoms have been ambiguous, and when there was need of a timely warning for accidentally exposed persons who had not yet developed symptoms. When groups are screened, the extent that individual values or the averages for the group as a whole fall below the preexposure controls or normal averages serves as an objective index of the need for correction of handling methods or protective routines.

39 E. 67th St.

SURGICAL APPROACH TO COARCTATION OF THE AORTA COMPLICATING PREGNANCY

Richard L. Miller, M.D.
and
William H. Falor, M.D., Akron, Ohio

Coarctation of the aorta has been the subject of a tremendous amount of research and writing since the first thorough description of the condition by a Paris anatomist, in 1789. There have appeared in various world publications approximately 53 single articles during the first six months of 1950. From the point of view of the obstetrician, however, one finds less than 50 reported cases of this condition associated with pregnancy, and these articles all represent viewpoints of conservative pessimism.[1] Therapeutic abortion with sterilization and cesarean section with tubal ligation are the two components of good treatment most often recommended,[2] and in none of these articles does one find any reference to the surgical advance in the treatment that has been worked out during the last decade.

The lesion is not a medical rarity; the incidence as stated by Blackford is about 1 in 1,500, with a predominance of males over females of about 3 to 1.[2c] Abbott[3] and others in their classical investigations of this lesion state that approximately one in every four persons has some degree of aortic narrowing; yet obstetricians have reported only 43 cases associated with pregnancy.[4]

The diagnostic criteria are easily noted, provided the lesion is among those conditions reviewed in the differential. These criteria are as follows: (1) hypertension and a high pulse pressure in the upper extremities and normal or absent values in the lower extremities; (2) pulsations, thrills, or bruits along the course of possible collateral vessels or over the heart itself and along the left sternal margin; (3) roentgen evidence of a so-called hypoplastic aorta, notching or erosion along the inferior rib margins; (4) gradual diminishing of the pulse volume as the terminal arteries of the lower extremities are approached; and (5) subjective associated evidence at times including symptoms such as cyanosis, coolness of the lower extremities, severe persistent headache, feelings of weakness, chest pain, and generalized chronic fatigue.

The aforementioned evidence of the disease in our two cases has not been difficult to elicit; in fact, once we began to think about the possibility of such a lesion, the evidence was very clear.

From the City Hospital of Akron.

[1] (*a*) Mendelson, C. L.: Pregnancy and Coarctation of Aorta, Am. J. Obst. & Gynec. **39**: 1014-1021 (June) 1940. (*b*) Mendelson, C. L., and Pardee, H. E. B.: Congenital Heart Disease During Pregnancy, Am. J. M. Sc. **202**: 392-402 (Sept.) 1941.

[2] (*a*) Mendelson.[1a] Mendelson and Pardee.[1b] (*b*) Baber, M. D., and Daley, M. D.: Coarctation of Aorta in Association with Pregnancy (Review of Literature with Description of a Case), J. Obst. & Gynaec. Brit. Emp. **54**: 91-96 (Feb.) 1947. (*c*) Blackford, L. M.: Coarctation of Aorta, Arch. Int. Med. **41**: 702-735 (May) 1928.

The prognostic conclusions one draws from the statistics obtained during the nonsurgical era are stated in an article written by Reifenstein, Levine, and Gross [5] as follows: Twenty-six per cent lived to old age in spite of the coarctation. The average age at death was 47 years. They had very few difficulties and had a long useful life. Twenty-two per cent died from bacterial endocarditis or aortitis. The average age at death was 28 years. Twenty-three per cent died suddenly from aortic rupture. The average age at death was 27 years. Twenty-nine per cent died subsequent to the hypertensive state (congestive heart failure, intracranial hemorrhage). The average age at death was 32 years. Thus, compiling the ultimate result, one can make a few general statements to patients concerning their life expectancy: They have an average age of death of 30 years if they are so unfortunate as to be among the 75% who die as a direct result of their lesion. Over 60% of all patients with coarctation die before the age of 40.

The surgical relief of the symptoms as reflected in the prognostic statistics is a technical advance of the highest order. Surgical correction of this anomaly was first performed in 1944, and in a recent report Gross [6] listed 100 cases in which surgery was accomplished with an operative mortality of 11% and full relief of symptoms in approximately 80%. He expressed the belief, however, that, because of more rigid criteria applied to the selection of future operative cases, the mortality should be reduced to about 5%. These cases were followed for two months to four years, and his results are as follows: In nine cases, only exploration was done; the resection was impossible because of anatomic reasons. Eleven fatalities occurred, seven of which, according to Gross, would probably have been avoided if the present changes in technique had been used and if the operator had refused to operate, because of complications. In one case, there was no relief from the hypertension. In eight cases, there was fairly satisfactory relief from the symptoms. In 71 cases, complete disappearance of the hypertension was achieved. The general opinion of those men [7] who have performed the bulk of these operations in the United States is that no one, once the diagnosis is made, should advise against surgery when there are no undue complications present.

The exact type of operation is an individual problem, and various techniques have been employed. There are four procedures that have been used.[8] The first is sympathectomy, and the results have been poor enough so that it has been almost abandoned. A second technique leaves the coarctation in place and simply bypasses it by an end to side anastomosis between the left subclavian artery and the aorta just distal to the coarctation. The third technique is probably the one that will be most often and most successfully employed: the resection of all the coarcted segment and an end to end, intima to intima anastomosis of the aorta; this was the procedure used in the case herein reported. The fourth technique employs a human aortic graft to unite the aortic channel; this has been done by Gross [6] in six instances, with a follow-up of 3 to 15 months.

Among pregnant patients with coarctation of the aorta reported in the literature, without surgical treatment, we note a mortality of 75%.[1] The causes of this high mortality, in addition to the aforementioned causes, most probably include the increased cardiovascular load that is imposed on an already incompetent system. There is a 50% increase in cardiac output noted in pregnancy, which begins about the fourth month of gestation. Also, decreased renal blood flow occurs in coarctation of the aorta and is aggravated by the increased renal stresses of normal pregnancy. The dyspnea, the additional body weight, and the incidence of toxemia (which has been found to be no greater in these patients than in the normal pregnant woman) all have a direct bearing on the ultimate outcome of the pregnant woman who has this anomaly.

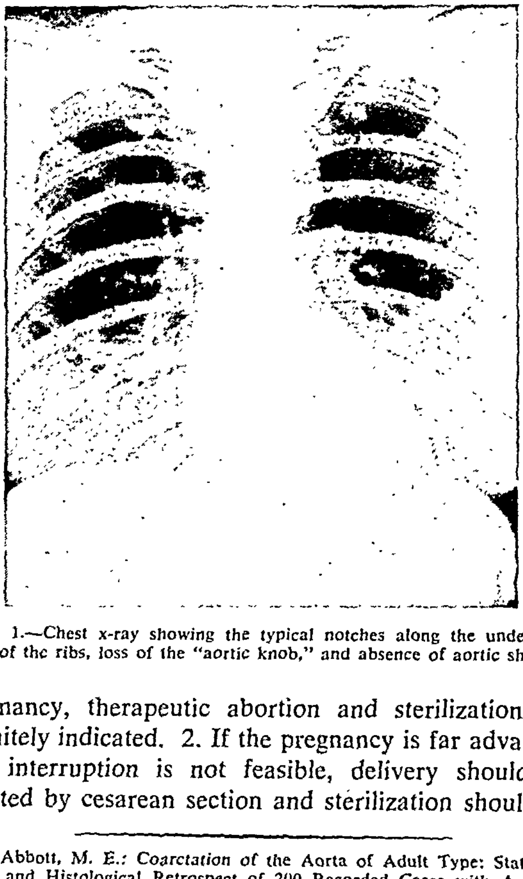

Fig. 1.—Chest x-ray showing the typical notches along the under surfaces of the ribs, loss of the "aortic knob," and absence of aortic shadow.

In the two comprehensive articles on the subject by Mendelson [1a] and Baber and Daley,[2b] the following general statements are made concerning the handling of these patients: 1. If one diagnoses coarctation early in pregnancy, therapeutic abortion and sterilization are definitely indicated. 2. If the pregnancy is far advanced and interruption is not feasible, delivery should be effected by cesarean section and sterilization should be

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[3] Abbott, M. E.: Coarctation of the Aorta of Adult Type: Statistical Study and Histological Retrospect of 200 Recorded Cases with Autopsy, of Stenosis or Obliteration of Descending Arch in Subjects Above Age of 2 Years, Am. Heart J. 3: 574-618 (June) 1928. Hamilton, W. F., and Abbott, M. E.: Coarctation of the Aorta of the Adult Type: Complete Obliteration of Descending Arch at Insertion of Ductus in Boy of 14; Bicuspid Aortic Valve; Impending Rupture of Aorta; Cerebral Death; Statistical Study and Historical Retrospect of 200 Recorded Cases, with Autopsy, of Stenosis or Obliteration of Descending Arch in Subjects Above Age of 2 Years, Am. Heart J. 3: 381-421 (April) 1928.

[4] Mendelson.[1a] Baber and Daley.[2b] Kinney, A. D.; Sylvester, R. E., and Levine, S. A.: Coarctation and Acute Dissection of the Aorta Associated with Pregnancy, Am. J. M. Sc. 210: 725-732 (Dec.) 1945. Novak, E. R.: Pregnancy Complicated by Coarctation of the Aorta, Am. J. Obst. & Gynec. 53: 1054-1056 (June) 1947. Turino, T. R., and Wallace, J T.: Résumé of Cardiac Disease in Pregnancy for 5-Year Period, with Report of Case of Coarctation of the Aorta, Am. J. Obst. & Gynec. 45: 526-529 (March) 1943. Walker, C. W.: Pregnancy and Labour in Case of Congenital Coarctation of Aorta, Brit. M. J. 1: 190-191 (Feb. 13) 1943.

[5] Reifenstein, G. H.; Levine, S. A., and Gross, R. E.: Coarctation of Aorta: Review of 104 Autopsied Cases of "Adult Type," 2 Years of Age or Older, Am. Heart J. 33: 146-168 (Feb.) 1947.

performed. It is with these pessimistic viewpoints that we take issue, and we differ because we feel that there is now a procedure that in a large percentage of cases should produce a cure. It is our considered opinion that the total salvage of mother and child will be greater if one routinely practices operative repair of severe coarctation as soon as the lesion is discovered.

Mendelson demonstrated the high maternal and fetal mortality at parturition as well as the high incidence of postpartum maternal morbidity.[1] Pregnancy uncommonly is interrupted by the abdominal operative procedures of appendectomy and cholecystectomy and rarely is altered by thyroidectomy, mastectomy, and other extra-abdominal procedures. Touroff and others have, during gestation, ligated an infected patent ductus arteriosus, with cure of the mother and subsequent delivery of a normal viable infant. There appears to be no valid objection to resection of a coarctation of the aorta when similarly discovered. A coarctation that is the site of endocarditis, or a lesion threatening both maternal and fetal life because of uncontrolled hypertension, will, if left untreated, undoubtedly account for more deaths and most certainly higher morbidity than if subjected to resection. Fortunately, as in the case reported herein, the crisis may arrive only at or near term, and the decision to resect the coarctation will be superseded by an immediate cesarean section without sterilization, followed in five or six weeks by aortic resection. It should probably not be necessary, in the successfully treated patient, to prevent or interrupt subsequent pregnancies. Provided the patient is operable, there ought to be no compromise; one cannot compromise with the inevitable 75% mortality before 40 years of age that is known to exist.

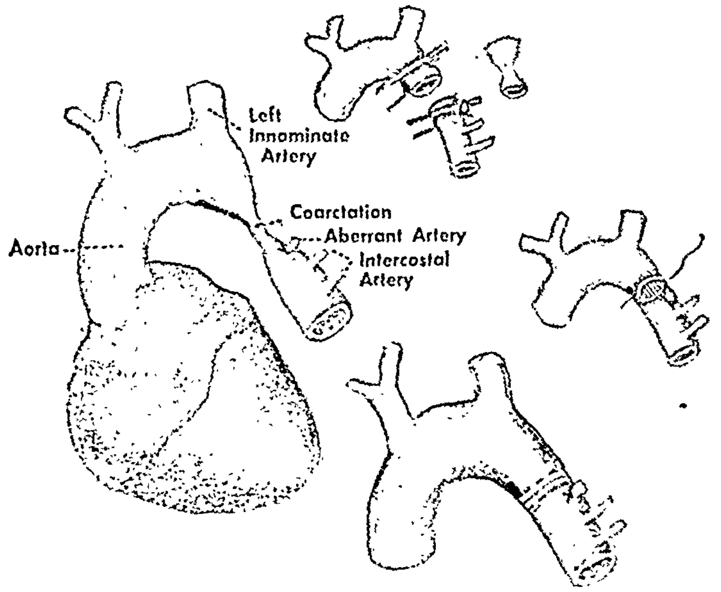

Fig. 2.—Sketch showing the site of the coarctation, the resected segment, and the end to end anastomosis technique used here in the aortic seal.

Of the two patients seen in our hospital during the past year, we shall describe only one. The second patient was a primiparous woman with a normal uneventful prenatal course who was delivered by cesarean section and discharged on her 10th postoperative day; the pregnancy had no demonstrable deleterious effects, and there has been no operative procedure as yet.

REPORT OF A CASE

L. B., a 22-year-old white primigravida who had only recently come to the United States from her native Italy, entered our prenatal clinic for the first visit Aug. 25, 1949. Her past history was essentially normal, and her only complaint, other than those symptoms associated with her pregnancy, was referred to the severe, chronic headache that she had had for a number of years. Her expected date of confinement was Oct. 30, and the physical examination revealed a 28-week intrauterine pregnancy, adequate pelvic measurements, and a soft systolic murmur at the apex, which was interpreted to be functional in type. The blood pressure was recorded as 110/68 (this was taken by the nurse and not checked). Observations in the next two biweekly visits were not remarkable, the blood pressure recordings being 100/64 and 100/66, with normal results of urinalyses.

On Sept. 29, the patient's blood pressure was found to be 148/100; there was no edema, albuminuria, nor any toxic manifestations. She was placed on a low-salt diet and sent home. On Oct. 6, her blood pressure was 200/100, with no edema, nor albuminuria, but her headaches had become more intense. A diagnosis of severe preeclampsia was made, and she was hospitalized.

During the 42 days that had elapsed since the patient had been admitted to our clinic, her total weight gain was 4 lb. (1.8 kg.); urine was normal throughout with no demonstrable edema. Her physical examination in the hospital revealed a somewhat louder systolic murmur at the apex and aortic areas, which was interpreted as being secondary to her hypertension. The McDonald measurement was 30 cm., and cephalic presentation with the vertex floating was noted. The urine was normal, hemoglobin 11.0 gm. (71%) carbon dioxide-combining power 30%, and albumin-globulin ratio 1.6:1.0. She was put at bedrest, with a dietary restriction of 200 mg. of sodium. She was given 0.19 gm. of amobarbital sodium every three to four hours, 10 cc. of a 25% solution of magnesium sulfate intramuscularly twice daily, and 500 cc. of 20% glucose in water by infusion twice daily. The next day, Sept. 7, there was no change, in spite of the deep sedation; her blood pressure was 150/102, and an x-ray of the chest was reported as being essentially normal. On Sept. 10, after an undeviating course as above, a sterile vaginal examination revealed a long, closed cervix. In spite of this, a futile attempt was made to induce labor with posterior pituitary given in graduated doses after an enema and castor oil. The patient's blood pressure remained at 170/100, there was good sedation, and the fetal heart rate was normal. On Sept. 11, in view of the persistence of the above symptoms and consistently elevated blood pressure, a laparotrachelotomy was performed with spinal anesthesia; a normal 6 lb. 12 oz. (3,062 gm.) male infant was delivered. The first postoperative day was marked by diaphoresis and, although the treatment for toxemia had been continued without lapse, the patient's blood pressure was 184/120, higher than before surgery. Her average urinary output was 1,800 cc. every 24 hours. The diaphoresis continued, and temperature of 102.6 F developed. On Sept. 14, the temperature rose to 104.4 F, the headaches became very severe, and she was depressed, nauseated, and appeared very ill. It was recommended, in medical consultation, that blood cultures be made and that we administer chloramphenicol in addition to penicillin.

The next day the consultants made a clinical diagnosis of pneumonia of the lobe of the right lung, and a second chest x-ray was ordered. This x-ray (fig. 1), in addition to demonstrating minimal pneumonic changes in the lower lobe of the right lung, revealed notching along the inferior borders of the

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6. Gross, R. E.: Coarctation of Aorta: Surgical Treatment of 100 Cases, Circulation 1:41-55 (Jan.) 1950.

7. Gross.[6] Bradshaw, H. H.; O'Neill, J. F., and Hightower, F.: Resection of Coarctation of Aorta with Subclavian-Aortic Anastomosis: Report of Case with Discussion of New Clamp for Aortic Resection and Anastomosis, J. Thoracic Surg. 17:210-222 (April) 1948. Clagett, O. T.: Surgical Treatment of Coarctation of Aorta, Proc. Staff Meet., Mayo Clin. 23:359-360 (July 21) 1948; Postgrad. Med. 4:404-412 (Nov.) 1948. Crafoord, C., and Nylin, G.: Congenital Coarctation of Aorta and its Surgical Treatment, J. Thoracic Surg. 14:347-361 (Oct.) 1945.

8. Gross.[6] Gross, R. E., and Hufnagel, C. A.: Coarctation of Aorta: Experimental Studies Regarding its Surgical Correction, New England J. Med. 233:287-293 (Sept. 6) 1945. Blackford, L. M.: Coarctation of Aorta: Preliminary Report, Proc. Staff Meet., Mayo Clin. 2:281-284 (Nov. 30) 1927.

ribs and cardiac enlargement to the left, and for the first time we had a clue to the correct diagnosis. A thorough search was then made for physical evidence of coarctation of the aorta, and all the classical signs were found. There were absolutely no arterial pulsations in any part of either lower extremity, nor was there any blood pressure obtainable in either leg. The lower extremities were noted to be cool and dry; the systolic murmur was rechecked and found to extend along the left sternal margin, along the inferior borders of the ribs, between the scapulas, and in both supraclavicular spaces. There was no cyanosis and no evidence of cardiac decompensation. With the exception of penicillin therapy, all medication was stopped. The patient was allowed to get out of bed. Her blood pressure was 160/100 in the left arm and 174/110 in the right arm; none was obtainable in the legs. She was discharged on Oct. 23; her wound was healing satisfactorily, and she was afebrile and ambulatory; her blood pressure was as noted above.

The patient returned to the clinic on Dec. 5 for examination, and it was noted that the incision was healed, her uterus was well involuted, lochia had ceased, and her blood pressure averaged 164/96. The headaches were still present, and she complained and urgently requested some relief. On Dec. 14, she was readmitted to the hospital on the surgical service of one of us (W. H. F.) for further studies; all the aforementioned signs were elicited, and on Dec. 19, an arteriogram was performed. The left common carotid and subclavian, internal mammary, and intercostal arteries were visualized, but none of the contrast medium entered the aorta. Subsequently, studies were done using fluorescein, and the fluorescence was detected in the fingers in 30 seconds and in the feet in 2 minutes.

On Jan. 4, 1950, approximately 11 weeks after the laparotrachelotomy, a transthoracic aortectomy with primary end to end anastomosis was performed by one of us (W. H. F.) with general endotracheal anesthesia. The lesion (fig. 2) was well visualized after a technically difficult approach through circinate aneurysms and grossly dilated intercostal vessels; the aorta was estimated to be twice the caliber above the site of the stenosis as it was below, and the stenosed segment measured approximately 3 cm. in length; a small probe could but just pass through the narrowed channel that remained. After the successful anastomosis, and during the next 24 hours, the pulses gradually returned to the lower extremities; the most gratifying evidence that was noted was a rather prompt fall in blood pressure, so that within 24 hours not only were there easily palpable pulses in both lower extremities but the blood pressure in each arm averaged 130/74. Her subsequent postoperative course was uneventful, and she was discharged on her 15th postoperative day; her lower extremities were warm and dry, with notable pulsations in the femoral, popliteal, and dorsalis pedis arteries. Her headaches had completely disappeared, and her blood pressure remained at about 120/70 in each arm and 125/95 in each leg. All clinic visits following this procedure substantiated all the physical evidence of improvement. The patient felt well, gained weight, had no headaches, and carried on a full schedule in her home.

She was next seen in the prenatal clinic in November, 1950, approximately 22 weeks pregnant. Her blood pressure was 120/84, and she felt well and had not had any headache. During the next two months she attended the clinic regularly, and her blood pressure recordings (all done by the resident in charge) were never over 132/90, her urine was normal, and during this period she gained 3½ lb. (1.5 kg.). On Feb. 14, 1951, she was admitted to the labor room, because of possible premature labor; the uterus was soft and thought to be somewhat larger than her menstrual history would indicate. Auscultation, palpation, and a confirmatory x-ray revealed twin fetuses. The blood pressure was recorded at 160/100; the urine was normal, with no albuminuria. Approximately eight hours later, when it became evident that labor was inevitable, a repeat laparotrachelotomy was performed with general anesthesia, and the senior obstetrician recommended sterilization by tubal ligation. The aorta was palpated, and, although the pulsations were vigorous, the aorta itself was estimated to be about half normal size. The twins weighed 4 lb. 13 oz. (2,183 gm.) and 4 lb. 4 oz. (1,928 gm.), respectively, and responded well at birth. The patient's postoperative course was uneventful; she was not morbid by the accepted standard, and her incision healed properly. The only thing of note concerned the rather paradoxical blood pressure recordings; each recording was different, depending on the examiner and on the patient's emotional state. The recordings varied from arm to arm, the right arm consistently registering about 160 systolic and 100 diastolic, whereas the recordings in the left arm were usually 30 to 40 mm. Hg. lower. An angiogram was taken on the 11th postoperative day (Feb. 25) and showed normal filling of the superior vena cave, right atrium and ventricle, pulmonary arterial system, left atrium and ventricle, and upper aorta. There was a moderate residual constriction at the level of the anastomosis and rather marked narrowing in the lower thoracic and upper abdominal segments. The patient was discharged on Feb. 28, with blood pressure of 148/80 and 136/86 in the right arm and right leg, respectively, and 118/80 and 126/84 in the left arm and left leg. At no time since has she had dyspnea, headache, chest pain, or any related cardiovascular symptoms. Her urine is normal, with specific gravity of 1.030, and her incision healed properly. At the time of her clinic visit on May 19, the patient had no subjective symptoms. She weighed 118½ lb. (53.7 kg.), and her blood pressure recordings in the left arm and left leg were 110/70 and 120/84, respectively, and in the right arm and right leg 170/110 and 118/84. There were no headaches, the pulses were normal in both lower extremities, and there were no abnormal urinary findings. A follow-up chest x-ray revealed partial recalcification of the rib margins (fig. 3).

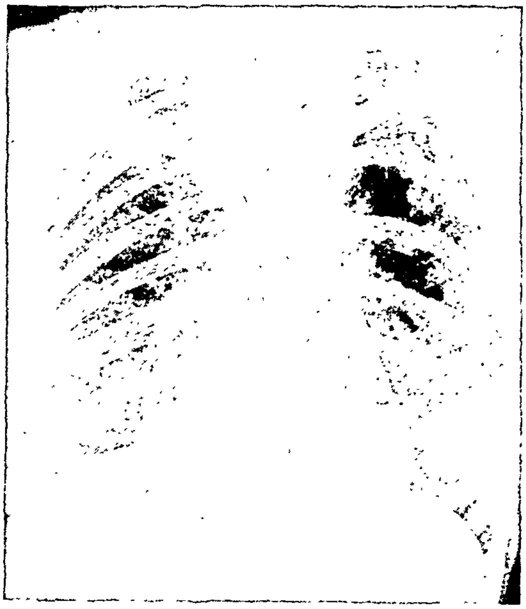

Fig. 3.—Chest x-ray taken approximately 18 months after the aortic resection, showing recalcification of the ribs, prominence of the "aortic knob," and diminution of heart size.

COMMENT

Were it not for the fact that pneumonitis developed in our patient and a chest x-ray subsequently made, we would most likely never have made the diagnosis. This is an average hospital in an average city; at least 10 physicians saw this patient, and not one thought of the proper diagnosis. This picture can easily be confused in the unwary mind with preeclampsia, especially if associated renal deficiency or concomitant edema is present. It has been estimated that nearly 100,000 persons in the United States have some degree of aortic coarctation [2c]; since nearly 25,000 of these are women under 30 years of age, one should be cognizant enough of the lesion and its associated symptoms to consider it when confronted by a peculiar case of "preeclampsia." Once the diagnosis is made, we feel that the surgical approach should be employed if at all possible. The operation is a delicate one but readily accomplished by trained thoracic surgeons. One fully appreciates the vast crevasse that separates their artistry from pelvic surgery when one beholds the faith a vascular surgeon places in a single strand of no. 00000 silk with which he seals an aortic anastomosis —so many of us barely trust a subsidiary channel such as the uterine artery to a no. 2 chromic ligature, doubled more often than not. The inevitability of the mortality statistics cannot be ignored. No one who reports a single case can speak in generalities, but certainly this case implies that there is a new and better outlook for patients such as ours.

SUMMARY AND CONCLUSIONS

Pregnancy complicated by coarctation of the aorta does not necessitate therapeutic abortion nor routine sterilization. When the diagnosis is made early in the pregnancy, it is recommended that aortic surgery should be done, provided no complications exist. If the diagnosis is made at term, it is probably best to deliver the patient by cesarean section and do the aortic surgery sometime after the sixth postpartum week. When the postoperative result is satisfactory, future pregnancies should be handled as though the patient had no cardiovascular defect. We do not believe in the performance of routine sterilization procedures because of this lesion, provided it is operable.

523 E. Market St.

CLINICAL RELATIONSHIP OF CARCINOMA IN SITU AND INVASIVE CARCINOMA OF THE CERVIX

Gerald A. Galvin, M.D., Howard W. Jones Jr., M.D.
and
Richard W. TeLinde, M.D., Baltimore

The histological characteristics of surface carcinoma of the uterine cervix are now well appreciated by all serious students of gynecological pathology, and there seems to be universal agreement that, cytologically, surface and invasive cancer are identical. However, the existence of a temporal or causal relationship between these two entities is less commonly accepted, and some authorities seriously question the invasive potentiality of surface carcinoma. Such a relationship must be clearly and conclusively demonstrated if the present attitude toward surface carcinoma is to be maintained. If surface carcinoma is not the initial stage of clinically recognizable cervical cancer, there is no scientific basis or reason for treatment of carcinoma in situ as such, and the practice of examining the symptomless cervix by inspection, smear, or biopsy in order to detect cancer in a noninvasive stage becomes less significant. Any study that endeavors to establish a relationship between noninvasive and invasive carcinoma would seem to be a healthy pursuit.

The histological evidence of such a relationship is ample. The presence of both surface and invasive carcinoma in the same section of a removed cervix was first noted by Schottländer and Kermauner,[1] but has been subsequently observed by all those earnestly interested in the pathology of cervical carcinoma. Schiller,[2] Hinselmann,[3] and Meyer [4] have contributed scholarly observations on surface carcinomas that penetrate the basement membrane to invade the underlying cervical stroma as well as neighboring lymphatics. Two of us (G. A. G. and R. W. T.)[5] have demonstrated invasive carcinoma in the removed cervix in a large number of cases in which the preoperative cervical biopsy showed only surface carcinoma.

Histological evidence alone is not sufficient to establish this relationship, and clinical experience must support the contention that surface carcinoma is the progenitor of invasive cancer. Diagnosed but untreated surface carcinoma must be observed to progress into clinically recognizable cervical cancer in more than an occasional case to eliminate the possibility of coincidence. Sporadically, there have been reports of the ultimate fate of untreated surface cancer. These reports in which cervical cancer has been diagnosed clinically months or years following biopsy evidence of noninvasive cervical carcinoma have already been collected and presented by two of us (G. A. G. and R. W. T.),[5] Younge,[6] and Wespi,[7] but are again noted for the sake of cohesion (table 1).

In an effort to further investigate the clinical relationship between surface and invasive carcinomas, the present study was undertaken. This study comprised a review of the case histories of all the clinically diagnosed and histologically confirmed epidermoid carcinomas of the cervix treated on the public wards at the Johns Hopkins Hospital during the years 1940 to 1950. From this

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From the Department of Gynecology of the Johns Hopkins University and Hospital.

This article has been shortened by omission of figures 2 and 4. They will appear in the authors' reprints.

Miss Eva Hildebrandt, A.B., gave technical assistance in preparation of the histological sections necessary for this study.

Read before the Section on Obstetrics and Gynecology at the One-Hundredth Annual Session of the American Medical Association, Atlantic City, June 14, 1951.

[1] Schottländer, J., and Kermauner, F.: Zur Kenntnis des Uteruskarzinoms: Monographische Studie über Morphologie, Entwicklung, Wachstum, nebst Beiträgen Zur Klinik der Erkrankung, Berlin, S. Karger, 1912.

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[6] Younge, P. A.; Hertig, A., and Armstrong, D.: Study of 135 Cases of Carcinoma in Situ of Cervix at Free Hospital for Women, Am. J. Obst. & Gynec. **58**: 867, 1949.

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group were selected for further investigation those patients in whom either a cervical biopsy or a uterine curetting had been done at the same institution one year or more previous to the time carcinoma was clinically diagnosed. The specimens obtained from these patients were then studied in search of previously undetected surface carcinoma. During this time 723 cases of cervical cancer were histologically confirmed and treated on the public wards at the Johns Hopkins Hospital. Thirteen of these patients had been subjected to a cervical biopsy more than one year previously, while 8 others had been subjected to uterine curettage. These 21 pathological specimens as well as serial sections of the tissue remaining in the original paraffin blocks were reexamined and studied in the light of our present day appreciation of cytological alterations in cervical epithelium. The results of this study were astounding to us, as we were able to demonstrate previously unrecognized carcinomatous cervical epithelium in 11 of the 13 biopsy specimens and two of the eight specimens obtained by curettage. Thus, in 13 cases, carcinoma in situ was demonstrable in the cervical tissue obtained either by biopsy or curettage one or more years previous to the time that definitive therapy was instituted for cervical cancer. These 13 cases are discussed somewhat in detail, with microphotographs of the pathological specimens.

Table 1.—*Previous Reports of Carcinoma in Situ That Progressed to Clinical Cancer and the Time Interval Required for This Development*

Author and Date Reported	Time Interval Yr.	Time Interval Mo.
1. Smith and Pemberton,[8] 1934	4	1
2. Smith and Pemberton,[8] 1934	4	9
3. Smith and Pemberton,[8] 1934	6	1
4. Smith and Pemberton,[8] 1934	12	6
5. Schmitz and Benjamin,[9] 1934	..	9
6. Schiller,[2] 1938	5	(approx.)
7. Schiller,[2] 1938	5	(approx.)
8. Schiller,[2] 1938	5	(approx.)
9. Stevenson and Scipiades,[10] 1938	9	..
10. Stevenson and Scipiades,[10] 1938	3	6
11. Younge,[11] 1939	2	2
12. Younge,[11] 1939	3	4
13. Knight,[12] 1943	3	..
14. Knight,[12] 1943	4	11
15. Taylor and Guyer,[13] 1946	7	..
16. Goldberger and Mintz,[14] 1947	6	..
17. Pund and others,[15] 1948	4	9
18. Younge and others,[6] 1949	..	11
19. TeLinde and Galvin,[5] 1949	..	6
20. Scheffey, discussion in TeLinde and Galvin,[5] 1949	9	..
21. Wespi,[7] 1949	3	..
22. Wespi,[7] 1949	10	..
23. Wespi,[7] 1949	8	6
24. Hinselmann,[7] 1949	4	..
25. Hinselmann,[7] 1949	3	..
26. Hazelhorst, 1949	5	..
27. Jones,[16] 1950	9	10
28. Anderson,[17] 1950	9	10
29. Anderson,[17] 1950	3	11
30. Anderson,[17] 1950	1	3

Case 1.—At the age of 47 this postmenopausal, mentally retarded, multipara presented herself in the outpatient department on Sept. 10, 1942, with the complaint of abdominal pain but no vaginal bleeding. Examination of the cervix disclosed a small ulcerated area on the posterior lip. A specimen was obtained by biopsy. Review of this specimen reveals carcinoma in situ (fig. 1*A*). Although she was seen on numerous occasions with as many different complaints during the subsequent years, no cervical abnormality was noted and the patient received no specific therapy. When seen on May 23, 1950, however, she complained of a profuse, foul-smelling vaginal discharge of several months' duration. On this occasion, the cervix was described as being enlarged and hard and the mucosa was everywhere smooth, while the os appeared to be stenosed. The uterus was found to be symmetrically enlarged, soft, and tender. Both the cervix and the uterus were mobile. Subsequent dilatation of the cervix with the patient under anesthesia released a large amount of purulent material from the uterine cavity, while both cervical and endometrial tissue showed invasive carcinoma (fig. 1*B*). This lesion was classified clinically as international stage 2 and was treated by irradiation. When last seen on March 12, 1951, the patient had severe pelvic pain and evidence of recurrence.

Case 2.—At the age of 39 this primipara presented herself at the clinic with the complaint of profuse and prolonged menses during the previous four months. The cervix was described as being elongated, with an edematous hypertrophied anterior lip, but the mucosa appeared everywhere intact. Uterine curettage and cervical biopsy were carried out a few days later on Nov. 21, 1946. Reexamination of the cervical tissue obtained at that procedure revealed carcinoma in situ. During the next year this patient was seen periodically but reported no abnormal bleeding and received no specific therapy. After 1947 she was not seen again until May 1, 1950, when she stated that for the previous three months she had experienced postcoital spotting. Examination at this time disclosed a 1.5 cm. ulcerated area on the anterior cervical lip. The cervix was easily movable, and there was no parametrial induration. The cervical lesion was biopsied and revealed invasive carcinoma. This was classified as international stage 1 and was treated by irradiation. There was no evidence of recurrence when the patient was last seen on March 26, 1951.

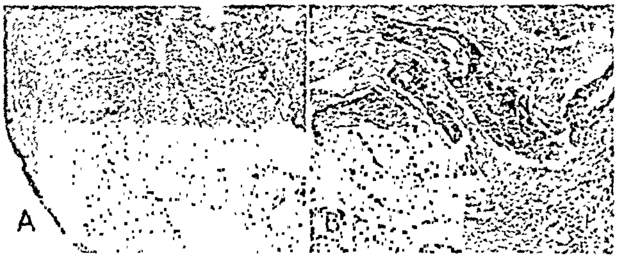

Fig. 1 (case 1).—A, biopsy specimen obtained on Sept. 10, 1942, contains an independent strip of carcinoma in situ, in contrast to relatively normal surface epithelium. *B*, specimen obtained May 23, 1950, showing invasive carcinoma (× 75).

Case 3.—On Aug. 31, 1945, this woman, para 4, then 32 years old, was examined in the outpatient clinic. At that time, she had numerous apparently unrelated complaints, but also admitted on specific questioning to postcoital spotting of two months' duration. The cervix was described as "normal." However, a cervical biopsy was done, and reexamination of the specimen (fig. 2*A*) reveals carcinoma in situ. The patient was not seen again until March 27, 1950, when she complained of a

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14. Goldberger, M. A., and Mintz, N.: Early Carcinoma of Cervix: Its Pathological and Clinical Aspects, J. Mt. Sinai Hosp. **14**: 784, 1947.

15. Pund, E. R.; Nieburgs, H. E.; Nettles, J. B.; Caldwell, J. D., and Nieburgs, H. E.: Preinvasive and Invasive Carcinoma of Cervix Uteri: Pathogenesis, Detection, Differential Diagnosis, and Pathologic Basis for Management, Am. J. Obst. & Gynec. **55**: 831, 1948.

16. Jones, H. E.: Cervical Epithelial Changes over 13-Year Period Terminating in Epidermoid Carcinoma, Am. J. Obst. & Gynec. **60**: 1369, 1950.

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heavy, blood-stained vaginal discharge of three weeks' duration. Pelvic examination revealed a 2 by 2 cm. fungating, friable, bleeding mass involving the anterior lip. The cervix, however, was freely movable, and there was no parametrial induration. Biopsy of the cervical mass (fig. 2*B*) revealed invasive carcinoma. The lesion was classified clinically as international stage 1 and was treated by irradiation. When last seen on March 26, 1951, the patient was well.

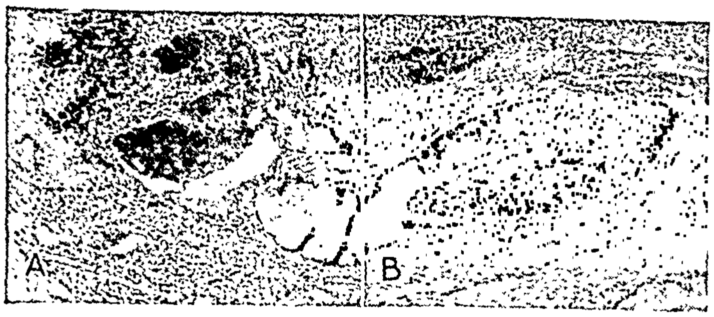

Fig. 3 (case 8).—*A*, biopsy specimen taken Aug. 8, 1944, shows an area of carcinoma in situ at the depth of an endocervical gland. *B*, specimen taken June 2, 1948, shows carcinomatous epithelium invading an endocervical gland but apparently not the surrounding stroma (× 75).

Case 5.—On Oct. 11, 1943, at the age of 40, this patient, para 6, was seen with the complaint of lower abdominal pain, but no abnormal vaginal bleeding. A small "suspicious" area on the anterior lip was noted and biopsied, while bimanual examination revealed evidence of pelvic inflammatory disease which was thought adequate to explain her symptoms. Reexamination of that cervical biopsy specimen revealed carcinoma in situ. Because of persistence of her abdominal pain, a subtotal hysterectomy and bilateral salpingo-oophorectomy were carried out at another hospital in August, 1946, and the patient remained well until six months before her second visit to our clinic on Oct. 10, 1949. At this time, she complained of continuous vaginal bleeding. Examination disclosed the cervix to be involved in a large friable mass, which invaded the right vaginal fornix and right broad ligament. Biopsy of this mass revealed invasive carcinoma, and the lesion was classified clinically as international stage 2. The patient was treated by irradiation and when last examined, March 19, 1951, had no evidence of recurrence.

Case 6.—In 1929 at the age of 52, this woman, para 9, at laparotomy was found to have bilateral dermoid cysts of the ovary, one of which had undergone torsion and was gangrenous. A bilateral salpingo-oophorectomy was carried out, but the uterus was not removed because of the condition of the patient. When seen five years later, the patient stated that she had had periodic vaginal spotting since the time of her operation. The cervix at that time was described as being small, with an irregular rough area around the os. This area did not take the Lugol stain and was biopsied July 7, 1934. Reexamination of this specimen revealed carcinoma in situ. Following this, the patient was seen sporadically but apparently had no specific pelvic complaints and received no specific therapy. On May 12, 1949, however, she complained of vaginal bleeding of two weeks' duration as well as a "falling of the womb." Examination revealed a third degree uterine prolapse, while the cervix possessed what was thought to be a trophic ulcer. Biopsy of the cervix revealed invasive carcinoma. The lesion was classified clinically as international stage 1, and the patient was treated by irradiation. When last seen, March 19, 1951, the patient appeared to be cured, not only of her carcinoma, but also of her prolapse.

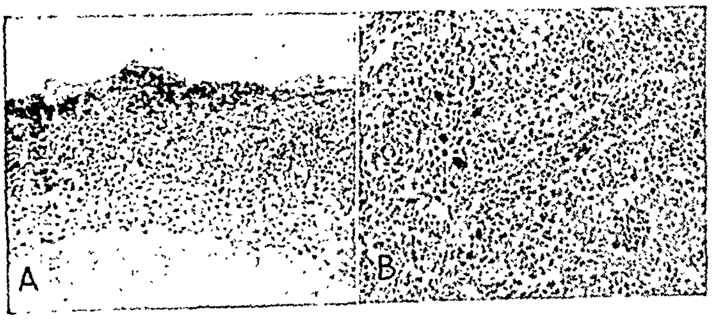

Fig. 5 (case 15).—*A*, biopsy specimen obtained Nov. 12, 1943, shows this independent strip of surface epithelium with the characteristics of a malignant growth. *B*, specimen obtained Nov. 18, 1944, shows very malignant invasive carcinoma (× 75).

Case 7.—On July 19, 1938, at the age of 32 this primipara was admitted to the hospital, complaining of profuse menses. Examination revealed uterine myomas, but no cervical abnormality was noted. Following preliminary curettage, a subtotal hysterectomy was carried out. Review of the specimens reveals cervical tissue showing carcinoma in situ. The patient remained asymptomatic until July 27, 1948, when, following three weeks of vaginal bleeding, she visited the outpatient clinic. The cervix was noted to be enlarged, and the surface was "eroded" and bled easily when irritated. Cervical biopsy was carried out. This specimen showed invasive carcinoma. Clinically the lesion was classified as international stage 1. The patient received irradiation therapy and was well when last examined, Feb. 19, 1951.

Case 8.—A Negro woman was seen on Aug. 8, 1944, at the age of 25, complaining of pain in the left lower quadrant and prolongation of the menses. The cervix was described as large and lacerated, and a small, raised, firm lesion on the posterior lip was noted. This area was biopsied, and the uterus was curetted, but no other therapy was carried out. Reexamination of this biopsy specimen (fig. 3*A*) reveals previously undiagnosed carcinoma in situ. One year later the patient delivered after her fourth fullterm pregnancy. Her next visit on May 19, 1948, was again prompted by a prolongation of the menses. Cervical examination at this time again disclosed a lesion on the posterior lip, which was granular in appearance and bled when irritated. Two cervical and subsequent total hysterectomy specimens on June 2, 1948 (fig. 3*B*) are interpreted as showing carcinoma in situ with no evidence of stromal invasion. The patient was well when last seen on Jan. 22, 1951.

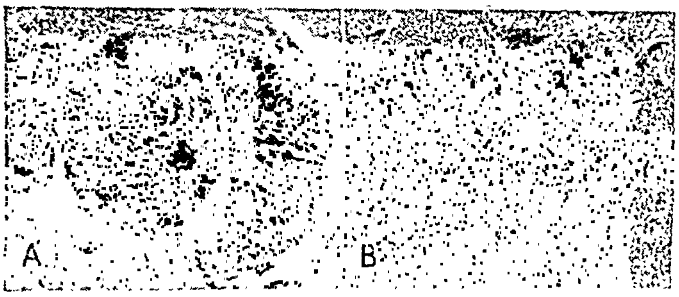

Fig. 6 (case 21).—*A*, biopsy specimen obtained Aug. 20, 1923, shows independent islets of carcinoma in situ (× 100). *B*, specimen obtained July 17, 1940, shows infiltrative carcinoma.

Case 10.—On April 20, 1941, this 47-year-old woman sought consultation because of a bearing down sensation in the vagina. History revealed that she had had six fullterm pregnancies and that she had had no vaginal bleeding or discharge for the past two years. The vagina was found to be atretic, while a small polypoid lesion on the anterior lip of the cervix was noted and biopsied. Reexamination of this specimen revealed carcinoma in situ. The patient received no therapy and remained completely asymptomatic, returning on Dec. 19, 1947 only by request. Examination at this time revealed the anterior lip of the cervix to be "granular and eroded," but because of vaginal adhesions, biopsies could not be obtained in the outpatient department. Accordingly she was admitted to the ward, and a sharp conication of the cervix was carried out. Microscopically, the removed tissue showed carcinoma in situ with questionable stromal invasion. Because of diabetes and hypertension, this patient was not subjected to surgery but received irradiation. She was well when last seen, March 5, 1951.

Case 11.—This 44-year-old woman, para 5, on July 2, 1940, complained of postcoital spotting. The cervix was noted to contain a "suspicious spot" on the posterior lip, and this was biopsied. Reexamination of that specimen revealed carcinoma in situ (fig. 4*A*). The patient received no therapy and was not seen again until March 27, 1947, when she again applied to the clinic complaining of persistent irregular vaginal bleeding. On this occasion, the cervix was described as being twice normal size, and a granular, hemorrhagic area was said to cover the anterior and a part of the posterior lip. The mobility of the cervix was limited and there was induration in the parametrium on the left side. Cervical biopsy at this time revealed invasive carcinoma (fig. 4*B*). Clinically, the lesion was classified as international stage 2. The patient received complete irradiation therapy. She died on Oct. 26, 1947. No autopsy was done, but it was felt that the patient may have died of extensive radiation necrosis rather than of an extension of her malignancy.

Case 15.—With the complaint of postcoital spotting of four months' duration, this 44-year-old woman, para 5, visited the outpatient clinic on Nov. 12, 1943. Examination of the cervix revealed a granular, bleeding area on the posterior lip. The area was biopsied. Review of the specimen (fig. 5*A*) revealed carcinoma in situ. At the time, the specimen was consided very suspicious, and the patient was strongly urged to have a curettage of the cervical canal, but she refused. The symptoms continued, and one year later, Nov. 18, 1944, at the insistence of her private physician she returned to the clinic. At this time, there was an obvious lesion on the posterior lip, the biopsy specimen of which (fig. 5*B*) showed invasive carcinoma. Induration was felt in the medial portion of both broad ligaments, and the lesion was classified as international stage 2. Complete irradiation was carried out, but the patient died April 19, 1946, of her malignant growth.

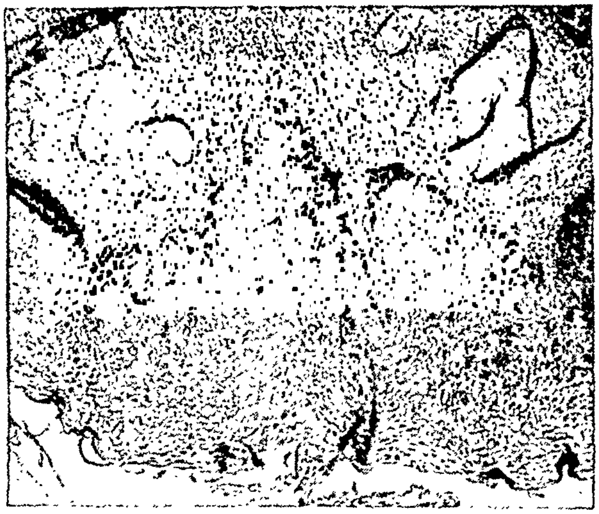

Fig. 7 (case 4).—Biopsy specimen obtained Feb. 13, 1945, shows evidence of hyperactivity of the basal cells. A specimen obtained from the same cervix 4 years and 10 months later showed invasive carcinoma (× 150).

Case 16.—This patient was seen on Sept. 8, 1941, at the age of 25 in the third month of her fourth and final pregnancy. At that time, she complained only of lower abdominal pain; there was no abnormal vaginal bleeding. An erosion on the anterior lip was noted and biopsied. Reexamination of this specimen revealed carcinoma in situ. The patient received no therapy, and she progressed to term and delivered uneventfully. Her next visit was on Dec. 15, 1943, when she sought consultation because of menses of six months' duration. The cervix was again described to be markedly eroded, lacerated, and enlarged. It was very freely mobile and there was no parametrial induration. The cervix was again biopsied; the diagnosis of carcinoma in situ was made, and this diagnosis was confirmed by the specimen removed at total hysterectomy, Jan. 14, 1944. When last seen on May 6, 1951, the patient was quite well.

Case 18.—When first seen on Aug. 3, 1936, this 50-year-old patient complained of a brownish vaginal discharge. She had had two fullterm pregnancies and was at that time two years past the menopause. The cervix was described as being small and flat, and no visible abnormality was discerned. The cervix, however, was biopsied. Reexamination of that biopsy specimen revealed carcinoma in situ. No therapy was advised, and the patient was not seen again until Aug. 13, 1943, after four weeks of continuous vaginal bleeding. The cervix was again described as being quite small, but its surface was noted to be rough and granular and to bleed quite freely when irritated. The cervix was mobile, and the parametria were not indurated. Cervical biopsy and uterine curettage was immediately carried out, and invasive carcinoma was found in the cervical as well as the endometrial tissue. Clinically this lesion was classified as international stage 2. The patient received irradiation therapy and was well when last seen, Feb. 19, 1951.

Table 2.—*Summary of Data Relating to Cervical Biopsies*

Case No.	Findings of Original Biopsy	Interval Yr.	Interval Mo.	Findings of Final Biopsy	Clinical Stage
1.........	Ca. in situ	7	9	Invasive ca.	1
3.........	Ca. in situ	4	7	Invasive ca.	2
4.........	BCH *	4	10	Invasive ca.	1
5.........	Ca. in situ	6	2	Invasive ca.	2
6.........	Ca. in situ	14	10	Invasive ca.	1
8.........	Ca. in situ	3	10	Ca. in situ	0
10.........	Ca. in situ	6	8	Ca. in situ	0
11.........	Ca. in situ	5	8	Invasive ca.	2
15.........	Ca. in situ	1	..	Invasive ca.	2
16.........	Ca. in situ	2	4	Ca. in situ	0
17.........	Acute inflam. no epithelium	4	11	Invasive ca.	2
18.........	Ca. in situ	7	..	Invasive ca.	1
21.........	Ca. in situ	16	8	Invasive ca.	3

* BCH = basal cell hyperactivity.

Case 21.—At the age of 37 this woman, para 3, was admitted to the hospital on Aug. 20, 1923, for investigation of profuse menses of four years' duration. Examination of the cervix revealed a laceration with a patulous os. Inside the cervical canal, there were several nodules that bled on irritation. The cervical canal was curetted and subsequently cauterized. No further therapy was carried out, and the patient passed through an uneventful menopause two years later. Reexamination of the cervical tissue removed disclosed intraepithelial carcinoma (fig. 6*A*). The patient apparently remained in relatively good health, and she was not seen again until July 17, 1940, when she complained of a vaginal bleeding of four months' duration. At this time the cervix was described as being enlarged, hard, fixed, and distorted. There was induration in the posterior vaginal fornix as well as the left parametrium. Cervical biopsy showed invasive carcinoma (fig. 6*B*). The lesion was classified clinically as international stage 3. Irradiation therapy was carried out, and the patient died of the malignancy, April 1, 1941.

It seems impressively significant that in the 13 cases in which a cervical biopsy had been obtained one or more years before cervical cancer was diagnosed and treated, carcinoma in situ was present in 11 of the 13 specimens (table 2). Of the two biopsy specimens in which carcinoma in situ was not found, one, even after serial sectioning of all the remaining tissue, showed no epithelial elements but only acute and subacute inflammatory tissue; the other (fig. 7) showed evidence of hyperactivity of the basal cells, a histological picture that some of us feel may be the forerunner of intraepithelial carcinoma. Thus, consideration of only the cervical biopsy specimens seems to indicate that clinical cervical cancer is frequently pre-

Table 3.—*Summary of Data Relating to Uterine Curettings*

Case No.	Findings of Original Curetting	Interval Yr.	Interval Mo.	Findings of Final Biopsy	Clinical Stage
2.........	Ca. in situ	3	6	Invasive ca.	1
7.........	Ca. in situ	9	11	Invasive ca.	1
9.........	No cervical tissue	7	8	Invasive ca.	3
12.........	No cervical tissue	11	4	Ca. in situ	0
13.........	No cervical tissue	8	..	Invasive ca.	2
14.........	Normal cervix	18	..	Invasive ca.	2
19.........	Normal cervix	12	7	Invasive ca.	3
20.........	No cervical tissue	19	11	Invasive ca.	1

ceded by carcinoma in situ. If this be true, then a cervical biopsy obtained one or even more years previous to the time the clinical signs and symptoms of cervical cancer appear may reveal this histological picture of surface carcinoma, and the routine examination of the asymptomatic cervix by biopsy as done in many detection clinics becomes not only a useful but an almost imperative procedure.

Reexamination of the tissue from the eight cases in which a previous uterine curettage had been performed disclosed previously unrecognized carcinoma in situ in only two cases (table 3). It must be remembered, however, that unless the cervical canal is purposely curetted, cervical tissue is obtained by uterine curettage only by accident. Actually, in the eight curettage specimens, cervical tissue was obtained in only four of them, two of which showed carcinoma in situ while the other two had no evidence of abnormality. This should reemphasize the advantage of curetting the cervical canal as well as biopsying the cervix when the uterus is being curetted.

SUMMARY AND CONCLUSIONS

In summary, 13 cases of carcinoma in situ not treated as such were studied. The ultimate clinical course was known in all cases. Three of the lesions remained in the noninvasive stage after 2, 4, and 6 years, respectively, while the remaining 10 had progressed to various clinical stages of cervical cancer 1 to 17 years later. How long intraepithelial carcinoma was present before the original biopsy was obtained is, of course, a matter of conjecture.

Consideration of these clinical and histological data seems to admit the following conclusions: 1. Carcinoma in situ is potentially invasive, and, if untreated, may progress to clinically evident cervical cancer. 2. As this study is retrospective, it does not indicate that carcinoma in situ always becomes invasive. It does, however, indicate that clinical cervical cancer is preceded by carcinoma in situ in too large a proportion of cases to be coincidental. 3. The clinical course of cervical cancer represents only a small segment of its life history and the greater part of its existence is spent in the preinvasive stage. 4. If the patient who is destined to have cervical cancer is fortunate enough to have a cervical biopsy within five years previous to the time she would have developed clinical signs and symptoms of cervical cancer, the biopsy specimen is likely to show carcinoma in situ. If the lesion is diagnosed and treated in that stage, the patient's chances of being cured are almost 100%.

113 W. Monument St. (Dr. Galvin).

SARCOID DIAGNOSED BY NEEDLE BIOPSY OF THE SPLEEN

REPORT OF A CASE

Matthew Block, M.D., Chicago

Sarcoid is a generalized disease with fairly characteristic but nonspecific, noncaseating granulomas found most frequently in the hematopoietic tissues. Clinically it is usually manifested by a chronic course with fever and various combinations of lymphadenopathy, splenomegaly, and hepatomegaly. Leukopenia and reversal of the protein albumin-globulin ratio are frequent. A fairly characteristic diffuse lesion in the lung fields, hilar lymphadenopathy, and, less frequently, osteolytic lesions of the small bones of the hands and feet may be found on x-ray examination. A negative tuberculin reaction, even with old tuberculin in 1:10 dilution, and a positive Kveim reaction occur in almost all patients.

Since numerous diseases may mimic sarcoid in one or more of these respects, it is necessary that one demonstrate as many of these phenomena as possible in order to make a definite diagnosis. More important and usually more difficult is the demonstration of the non-caseating granuloma. The usual method is by lymph node biopsy, although reports of biopsy of the liver[1] and nasal mucosa have appeared.[2] The lesion has also been demonstrated in sections [3] but not smears [4] of aspirated marrow.

It is the purpose of this paper to report a case in which the characteristic lesion was first demonstrated in sections of tissue obtained by splenic biopsy, since I have been unable to find a case in the literature in which the diagnosis was made by this method. Moeschlin [5] states in his monograph "We have not done a splenic puncture in a proven case of sarcoid and a report on this is lacking in the literature." Splenic biopsy in cases of sarcoid is not mentioned in Weil's [6] monograph or in the recent paper by Morrison [7] on splenic puncture.

REPORT OF A CASE

A 25-year-old white housewife and office worker, first seen Oct. 30, 1950, noted the onset of nightly chills followed by temperature rises to 103 F and profuse sweats in November,

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From the Department of Medicine, University of Chicago.
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146: 1575-1580 (Aug. 25) 1951.

1949. Since then, a weight loss of 8 lb. (3.6 kg.) had occurred. There were no other symptoms except slight exertional dyspnea. Prior to the onset of fever, at another hospital, a tumor, "the size of a peach," had been removed from the left supraclavicular fossa. The diagnosis was cancer of the thymus. She received a course of x-ray therapy to the superior mediastinum after the biopsy. She had an appendectomy in 1941 and a uterine suspension in 1944. Menstrual history was not unusual, and she had one pregnancy; the child, a girl, was now 2 years old and in good health.

The patient stated that she experienced muscle cramps at night, but at the time of physical examination, Oct. 30, 1950, she was not in acute or chronic distress. The temperature was 37.6 C (99.6 F), pulse rate 108, and respirations 18. There was no lymphadenopathy, although the left supraclavicular fossa felt harder and fuller than the right. A hard, firm, smooth spleen was felt 5 cm. below the costal margin. The rest of the physical examination disclosed no essential abnormalities.

The white blood cell count was 4,500, hemoglobin 14.8 gm., and the red blood cell count 4,500,000. The differential count was normal, and sedimentation rate was 22 mm. per hour. The urine was normal and the Kahn reaction negative. X-ray of the chest showed a diffuse infiltration of each lung and a widened superior mediastinum.

At the initial visit, lymphoma, infectious granuloma (such as might be due to tuberculosis or infection with a fungus), sarcoid, and berylliosis were considered. Smears and sections of a needle aspiration of sternal marrow on Dec. 7 were normal except for increased numbers of plasma cells.

The patient was hospitalized in January, 1951. Results of physical examination were unchanged. Further data obtained at that time were as follows: thrombocytes 259,000 and albumin 4.2 gm., globulin 2.9 gm., and calcium 8.9 mg. per 100 cc. Cultures and smears of both gastric aspiration and sputum were negative for fungi and acid-fast bacilli. Results of histoplasmin, tuberculin (old tuberculin in 1:10 dilution), and coccidiodin skin tests and brucella and histoplasma agglutinations were negative. X-rays of both feet and hands were normal. The first Kveim test gave a negative result, but a test performed in June, 1951, gave a positive result.

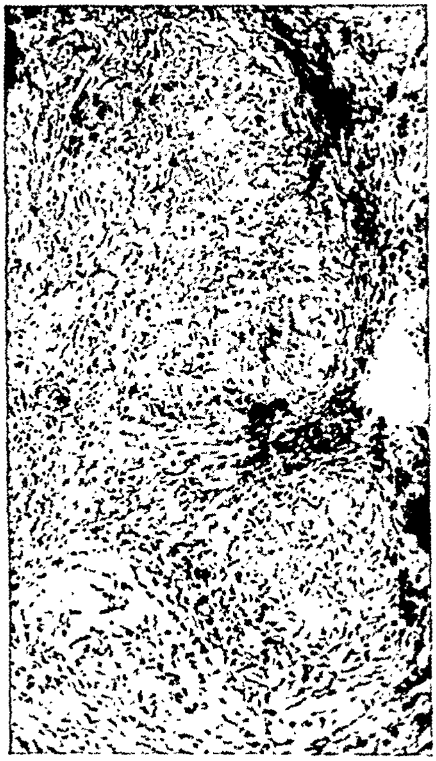

Fig. 1.—Needle biopsy of the spleen (× 160).

On Jan. 4, 1951, splenic biopsy[8] was performed transabdominally. Smears of the tissue were confusing, revealing only a few fibrils and distorted cells; sections revealed pronounced sclerosis and numerous islands of noncaseating granulomas, consisting of epithelioid cells, an occasional giant cell, and a thin ring of small lymphocytes (fig. 1). Smears and sections of marrow aspirated Jan. 4 were normal except for increased numbers of plasma cells. More sections of the marrow aspirated on Dec. 7, 1950, were cut subsequently, and two small granulomas, identical with those seen in the spleen, were demonstrated (fig. 2). The splenic lesions (fig. 1) were much more frequent per unit area than the marrow lesions (fig. 2).

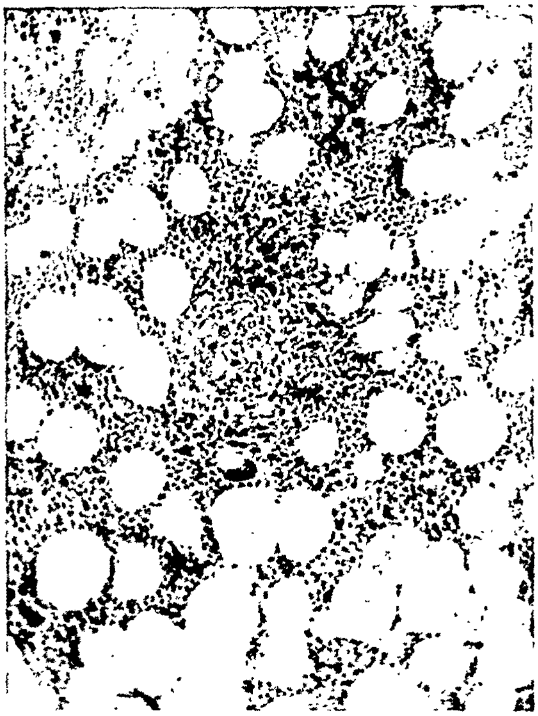

Fig. 2.—Needle biopsy of the marrow (× 160).

COMMENT

This case illustrates the value of splenic biopsy and the superiority of examination of sections over the examination of smears in the diagnosis of sarcoid. Since the use of the Vim-Silverman needle enables one to obtain far more splenic tissue, and consequently more sections and smears, with no greater risk than with the needle aspiration method,[9] it would seem that any patient with splenomegaly subjected to the risk of splenic biopsy should have the advantage of examination of both sections and smears.[8] Similarly, my experience as well as that of others [10] with marrow aspirates in cases of sarcoid confirms the necessity of examination of sections rather than of smears of marrow to demonstrate the characteristic lesion. Since the lesions were far more numerous in the spleen than in the sternal marrow, splenic biopsy would be more likely to demonstrate the lesion than would marrow biopsy.

It is difficult to assess the relative value of hepatic as against splenic biopsy. According to Ricker and Clark,[11] the incidence of lesions is about the same in either organ.

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[8] Block, M., and Jacobson, L. O.: Splenic Puncture, J. A. M. A. **142**: 641-647 (March 4) 1950.

[9] Moeschlin.[5] Weil.[6] Morrison and others.[7]

[10] Footnote 3. Lucia and Aggeler.[4b] Leitner.[4c]

[11] Ricker, W., and Clark, M.: Sarcoidosis: A Clinicopathologic Review of 300 Cases, Including 22 Autopsies, Am. J. Clin. Path. **19**: 725-749, 1949.

Unfortunately, liver biopsy was not performed in the patient described herein, so that comparison of the relative incidence of the granulomas in the liver and spleen could not be made. From experience gained in about 300 liver and spleen biopsies, I find no reason to believe that biopsy of one of these organs is more difficult or dangerous than biopsy of the other. Unfortunately the granulomas are not diagnostic of sarcoid, and an effort must be made to rule out, by history taking and appropriate laboratory studies, the infectious granulomas and disease due to beryllium.

SUMMARY

A case of sarcoid diagnosed by needle biopsy of the spleen is reported. Evidence is presented substantiating the superiority of biopsy of the spleen and marrow by a technique with which enough tissue will be obtained for the preparation of smears and sections over methods with which only enough material is obtained to prepare smears. The lesions in this case were far more numerous in the spleen than in the marrow, suggesting that splenic biopsy is more likely to yield positive results than is marrow aspiration.

PATHOLOGICAL FRACTURES IN PATIENTS WITH RHEUMATOID ARTHRITIS TREATED WITH CORTISONE

Felix Demartini, M.D., Albert W. Grokoest, M.D.
and
Charles Ragan, M.D., New York

During treatment with cortisone or corticotropin (ACTH) of patients with rheumatoid arthritis, most of the clinical features that have been described in Cushing's syndrome have been encountered, and it has been anticipated that the osteoporosis and fractures characteristic of this disorder would become manifest in patients sustained on hormonal therapy over long periods of time. Since some degree of osteoporosis is common in patients with chronic rheumatoid arthritis and because it is difficult to make accurate comparative studies owing to variations in radiological technique, it has not been possible in most instances to appraise the possible progression of osteoporosis resulting from treatment with corticotropin or cortisone. It might be expected in severe rheumatoid arthritis with marked osteoporosis that fractures would occur frequently, but actually it is one of the rarer complications of the disease.[1] The development, however, of pathological fractures in five patients who received hormonal therapy for periods varying from 2 to 20 months emphasizes the fact that decalcification of clinical significance does take place in at least some patients. It seems timely to record these observations in order to focus attention on this as an additional and serious complication of protracted treatment with corticotropin or cortisone.

It should be noted (see table) that one or more factors predisposing to osteoporosis were present in all five persons in whom pathological fractures developed while they were receiving hormone therapy and who constitute the basis of this report. Thus, all were females, all but one were postmenopausal, and all but two suffered from severe rheumatoid arthritis, the disease being of such severity in three that physical activity was at a minimum and existence was chiefly of a bed-and-chair type. In addition to these factors, predisposing to osteoporosis, each patient required at least 500 mg. of cortisone weekly to achieve a minimal palliative effect. Case reports of two patients are presented.

Clinical Description of Five Patients with Arthritis in Whom Pathological Fractures Developed During Cortisone Therapy

Patient	Sex	Age, Yr.	Type of Arthritis	Duration of Disease, Years	Classification[2]		Ambulation *		Post-menopausal, Years	Osteoporosis Before Cortisone	Duration of Cortisone Treatment, Months	Average Weekly Dose, Mg.	Site of Fractures	
					Stage	Class	Before Cortisone	During Cortisone					Vertebrae	Others
C. M.	F	47	Rheumatoid	30	4	4	2	2	1½	+	20	825	T 5, 6	
E. K.	F	61	Strümpell-Marie	8	4	2	3	3	11	+	11	500	T 12 L 4	
M. S.	F	45	Rheumatoid	17	4	3	2	3	no	+	11 15	825	T 6, 8 L 2, 3, 4	Both femora Left humeral head
C. H.	F	53	Rheumatoid	14	4	4	2	3	6	+	2	700	L 4	
L. D.	F	58	Strümpell-Marie	25	2	2	4	4	14	+	3	525	T 9, 10	

* Ambulation 1 = confined to bed; 2 = confined to bed and chair; 3 = ambulatory with crutches or cane; 4 = fully ambulatory.

REPORT OF CASES

Case 1.—M. S., a 45-year-old single, white, premenopausal woman, had suffered from idiopathic grand mal epilepsy for 20 years. This was well controlled with phenobarbital and mesantoin® (3-methyl-5,5-phenylethylhydantoin). With this therapy, she had one or two seizures a year without the development of fractures. Rheumatoid arthritis developed at the age of 28 with-

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Fellow of the Arthritis and Rheumatism Foundation (Dr. Demartini).

From the Department of Medicine, Columbia University College of Physicians and Surgeons, the Edward Daniels Faulkner Arthritis Clinic of the Presbyterian Hospital, and the Columbia Research Division of the Goldwater Memorial Hospital.

This study was supported in part by grants from the Masonic Foundation for Medical Research and Human Welfare. Cortisone used in this study was purchased from Merck & Co. with funds supplied by the United States Public Health Service (Grant #A-21 [C4]).

[1] Baer, G. J.: Fractures in Chronic Arthritis, Ann. Rheumat. Dis. 2: 269-273, 1941.

out preceding illness; and over a period of two years it became generalized. At Goldwater Memorial Hospital, Columbia Research Division, in 1939, she was noted to have findings characteristic of rheumatoid arthritis on physical and x-ray examination. She was anemic and had an elevated sedimentation rate and a positive group A hemolytic Streptococcus agglutination. A complete symptomatic remission (grade 2),[2] which lasted until June, 1949, (10 years), followed treatment with gold. At this time, again without known precipitating cause, activity substantiated by clinical and laboratory findings reappeared, necessitating readmission in January, 1950. Marked joint changes were shown by x-ray with moderate generalized osteoporosis (fig. 1 and 2). During the first part of this admission she received short trials of corticotropin and corticotropin peptides, with temporary symptomatic benefit. In September, 1950, sustained cortisone therapy was started with symptomatic improvement. She became partially ambulatory and in July, 1951, was discharged to her home on 825 mg. weekly of cortisone administered orally.

In August, 1951, she was seen in the clinic complaining of back pain following an epileptiform seizure. Roentgenograms at this time showed marked demineralization of the spine with compression fractures of T6 and T8. She was readmitted to the hospital, where, with continued cortisone therapy, progression of osteoporosis seemed evident, with partial compression of all vertebrae, a "cod fish" deformity (fig. 3). At this time her serum albumin was 4.1 gm. per 100 cc., globulin 1.7 gm. per 100 cc., calcium 9.7 mg. per 100 cc., inorganic phosphorus 3.9 mg. per 100 cc., and the alkaline phosphatase was 3.9 Bodansky units. Because of the osseous lesions, the cortisone dosage was reduced from 125 to 75 mg. daily, with marked increase in the arthritic symptoms. In December, 1951, while in bed, she suffered another convulsion and with no other trauma sustained a fracture of the neck of the left femur (fig. 4) and a supracondylar fracture of the right femur. The left humeral head was also found to be compressed on routine chest x-ray examinations.

CASE 2.—In E. K., a married, white, postmenopausal woman of 61, symptoms of rheumatoid spondylitis (Strümpell-Marie type) developed with peripheral joint involvement in 1943. Shortly after the onset, she received treatment with gold and was asymptomatic until 1949. At that time, following a traumatic fracture of the right hip repaired operatively, activity of the arthritic process recurred, with involvement of the low back, neck, and knees. She was treated variously with pregnenolone and short trials of corticotropin and cortisone without great improvement and was first seen at Presbyterian Hospital in January, 1951. She required crutches to come to the clinic and complained of pain in the knees and back. Extension of the left knee was limited to an angle of 160 degrees. Flexion of both hips was limited, and there was lumbar paraspinal muscle spasm. The hemogram was not remarkable, sedimentation rate was elevated (50 mm. in one hour, Westergren), and group A hemolytic Streptococcus agglutination and agglutination of sensitized sheep cells were negative. Serum calcium was 9.9 mg. per 100 cc., inorganic phosphorus 5.7 mg., and serum urea nitrogen 14 mg. Narrowing of the sacroiliac joints, straightening of the lumbar spine with squaring of the vertebral bodies, a bony ankylosis of the posterior elements of the cervical spine from the second to the sixth cervical vertebra, and narrowing of the left hip joint space were present by x-ray, with moderate osteoporosis of the visualized bones. Cortisone given intramuscularly in three doses a week totaling 500 mg. weekly was begun in January, 1951, and was followed by symptomatic benefit of a degree permitting the patient to return to her clerical work, although she continued to have back pain and to need crutches. Routine spine roentgenograms taken 11 months after the institution of cortisone therapy showed collapse of the bodies of two vertebrae, T 12 and L 4, with severe osteoporosis of the entire spine. Serum calcium, inorganic phosphorus, and alkaline phosphatase levels have remained normal.

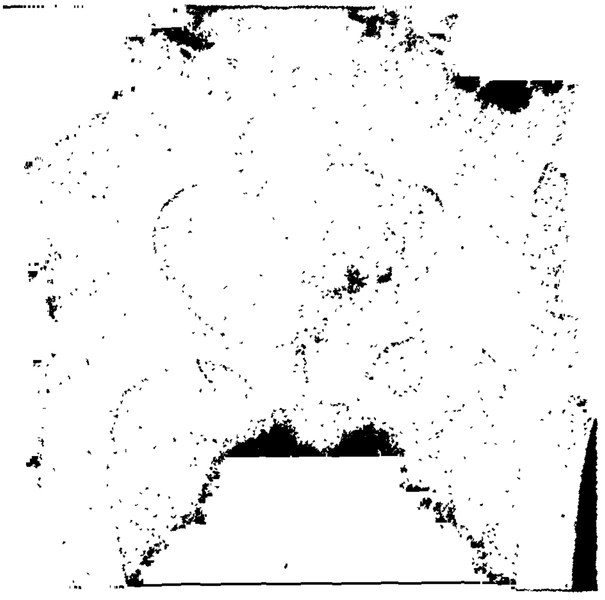

Fig. 1.—Patient M.S. Roentgenogram of pelvis before cortisone therapy was begun.

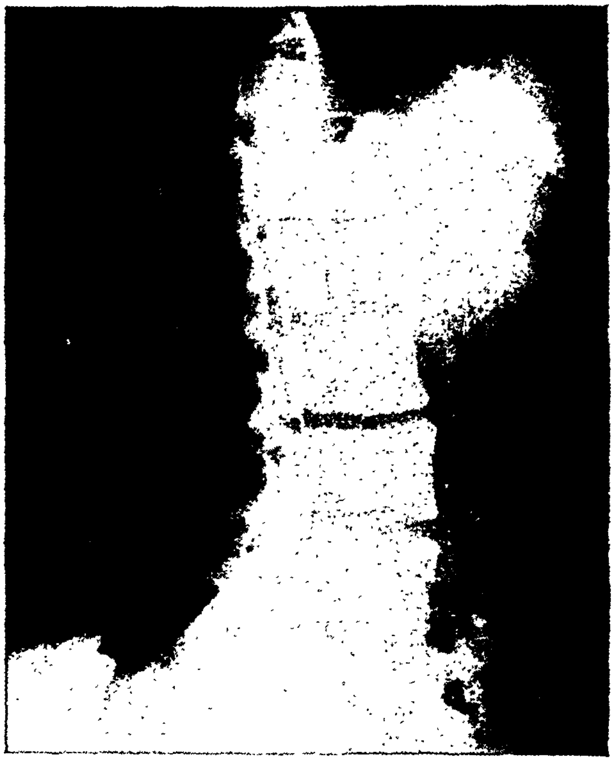

Fig. 2.—Patient M.S. Roentgenogram of spine before cortisone therapy was begun.

COMMENT

There is a possibility that the pathological fractures here reported may not have been related to increasing loss of bone strength but that they resulted merely from the minimal trauma of weightbearing in persons with preexistent osteoporosis. This was considered as a possibility in patient C. H. (see table), whose compression fracture was temporally closely related to beginning ambulation after a long period of bed rest; however, in patients E. K., L. D., C. M., and M. S. fractures appeared after the hormone had been administered for long periods of time and were not temporally related to beginning ambulation. In Baer's report [1] of 14 cases of fracture seen in patients with rheumatoid arthritis, only 1 of the fractures involved a vertebra.

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[2] Steinbrocker, O.; Traeger, C. H., and Batterman, R. C.: Therapeutic Criteria in Rheumatoid Arthritis, J. A. M. A. 140:659-662 (June 25) 1949.

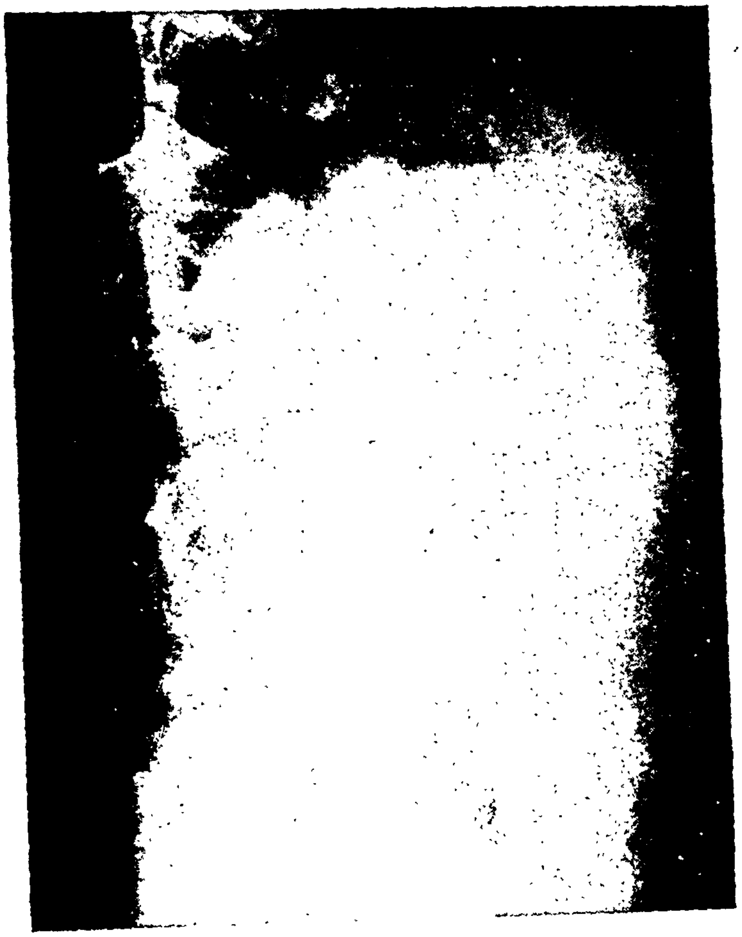

Fig. 3.—Patient M.S. Roentgenogram of spine showing "codfish deformity" after 15 months of cortisone therapy.

Several factors probably play a role in the osteoporosis of the patients with rheumatoid arthritis receiving cortisone. Patients with rheumatoid arthritis have a slight tendency to lose calcium,[3] which is undoubtedly potentiated by the administration of cortisone.[4] The antianabolic [4b] effect of cortisone on protein metabolism may involve the nonutilization of ingested amino acids.[5] Osteoporosis and pathological fractures are characteristic findings in Cushing's syndrome, and consequently the iatrogenic induction of Cushing's syndrome by hormonal therapy might be expected to produce similar osseous lesions. In order to produce a minimal beneficial effect in patients with severe rheumatoid arthritis, amounts of corticotropin or cortisone sufficient to produce the "hyperadrenalism" exemplified by Cushing's syndrome have usually been required. In such patients, efforts to decrease the hormone below such dosage levels have, in our experience, resulted in a waste of hormone, since no beneficial effect has been seen.

Fractures in experimental animals heal poorly during the administration of cortisone.[6] Associated with decreased numbers of macrophages and fibroblasts in the injured area, there are decreased numbers of chondrocytes and osteoblasts with less deposition of cartilage and bone. In nontraumatized bone such cells must be continually replaced, the rate of turnover being unknown. There is, perhaps, an analogy between the cellular reactions concerned with the repair of trauma and those concerned with the replacement of turnover, the former being an acute phase of the latter. If this be so, it is possible that during cortisone administration the activity of the cells concerned with the deposition of bone is diminished, since their turnover is slower. This hypothesis leads to the conclusion that the negative balance for calcium, phosphorus, nitrogen, and amino acids, and the antianabolic and possibly increased catabolic effects ascribed to these hormones may be related to a lowered activity of these cells with subsequent nonutilization of essential metabolites by them.

SUMMARY

1. Pathological fractures have developed in five female patients with rheumatoid arthritis treated for long periods with cortisone.

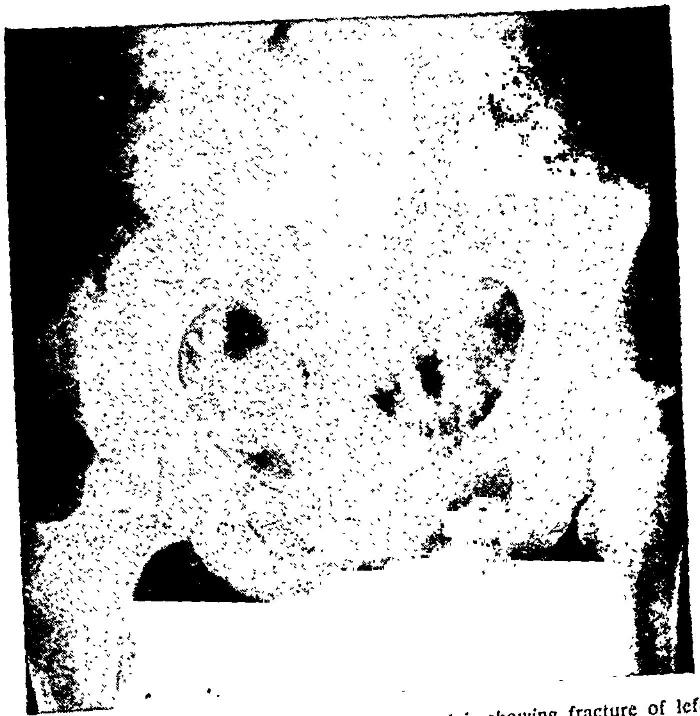

Fig. 4.—Patient M.S. Roentgenogram of pelvis showing fracture of left femur after 15 months of cortisone therapy. This was sustained following a grand mal seizure.

2. One or more factors commonly predisposing to osteoporosis, such as bed rest, disease activity, and the postmenopausal state, were present in all the cases.

3. An explanation of the osteoporosis is suggested involving decreased activity of the cells concerned with bone deposition as the primary fault.

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[3] Ropes, M. W.; Rossmeisl, E. C., and Bauer, W.: Calcium and Phosphorus Metabolism in Rheumatoid Arthritis and Degenerative Joint Disease, J. Clin. Investigation **22**: 785-790, 1943.

[4] (*a*) Sprague, R. H., and Power, M. H.: Metabolic Effects of Cortisone and ACTH in Cases of Rheumatoid Arthritis, in Proceedings of the First Clinical ACTH Conference, edited by J. R. Mote, Philadelphia, The Blakiston Company, 1950, pp. 363-385. (*b*) Albright, F.: Cushing's Syndrome: Its Pathological Physiology, Its Relationship to Adreno-Genital Syndrome, and its Connection with Problem of Reaction of Body to Injurious Agents ("Alarm Reaction" of Selye), Harvey Lect. (1942-1943) **38**: 123-186, 1943.

[5] Clark, I.: Effect of Cortisone on Protein Metabolism in the Rat as Studied with Isotopic Glycine, Federation Proc. **9**: 161, 1950.

[6] Blunt, J. W., Jr.; Plotz, C. M.; Lattes, R.; Howes, E. L.; Meyer, K., and Ragan, C.: Effect of Cortisone on Experimental Fractures in the Rabbit, Proc. Soc. Exper. Biol. & Med. **73**: 678-681, 1950.

CHRONIC URETHRITIS IN GIRLS

Clarence V. Hodges, M.D., Portland, Ore.

Chronic posterior urethritis has proven to be, in our experience, the commonest single basis for urinary tract infection in girls. Understanding of the pathogenesis and characteristics of this clinical entity will hasten early recognition and appropriate treatment.

To many practitioners today a girl who has an elevated temperature, urinary frequency, and pus in the voided urine specimen has pyelitis. They are happy to call the powerful sulfonamide and antibiotic agents to their aid and gratified to find that these agents appear to control the infection in most cases in very short order. Often not until there have been repeated recurrences and the entire chemotherapeutic and antibiotic armamentarium has been ineffective in bringing about a permanent cure is the possibility of an underlying process considered. Intravenous or retrograde investigation is then undertaken in the logical belief that a congenital obstruction will be found, but the urinary system drains normally. Cystoscopic examination is apt to result in a verdict of "no disease" unless special attention is paid to the portion of the urethra nearest the bladder and unless a suitable foroblique telescope or urethroscope is utilized to obtain adequate visualization of this area, i. e., unless the cystoscopist is aware of the potentialities of this area. However, the diagnosis may be inferred with reasonable certainty from the history and from examination of the voided and catheterized urine specimens. Urological examination, in addition to locating the lesion, is most valuable in ruling out the presence of concurrent urinary tract disease.

There is remarkably little discussion of this disease entity in children in medical teaching. The syndrome is well recognized in women; its pathogenesis has been the subject of considerable controversy, the main difference of opinion being whether or not the female has periurethral glands. It is not germane to the purpose of this paper to attempt to develop either point of view, although it may be stated that the present consensus appears to be that there are such glands. Whatever its pathogenesis, the presence and importance of inflammatory processes in the posterior urethra of women is well recognized. In children, partly because of difficulty in instrumental visualization of the urethra but mainly because of failure to appreciate the high incidence of a similar inflammatory process, the condition is recognized much less often. Campbell [1] has stated that it is the commonest finding in girls with persistent enuresis. Roen and Stept,[2] in an excellent review of the subject, emphasized the importance and prevalence of the condition and outlined the fundamentals of treatment.

MATERIAL AND METHODS

Twenty-five girls whose primary urinary tract lesion upon complete urologic investigation was found to be chronic inflammation of the posterior urethra are reported on. All had been treated by the referring physicians for urinary tract infection with one or more of the chemotherapeutic or antibiotic agents; some had had almost all of the antibiotics without relief. The average duration of urinary tract symptoms was two and one-half years. The patients were from 2½ to 9 years old, with an average age of 5. All patients were hospitalized for this investigation, which included a careful history and complete physical examination, complete blood count and routine urinalysis, blood urea nitrogen determination, catheterization for residual bladder urine and urine culture, cystoscopy, and retrograde pyelography. Endoscopy was done under general anesthesia.

Incidence.—The patients in this series represent approximately 10% of the pediatric patients who underwent complete urologic investigation at the University of Oregon Medical School Hospitals and Clinics during the two year period from July 1949, to July, 1951. Posterior urethritis was found in only two boys during the same period.

Symptoms.—The commonest symptoms were urinary frequency and a history of febrile episodes; each of these symptoms was found in 17 patients. Enuresis had been present in 10 patients. Eight patients showed urgency; of these, four showed urgency so severe that it approached incontinence. Six patients complained of abdominal, loin, or back pain during acute episodes. Although 18 girls were said to have shown pyuria on analysis of voided specimens during their previous course, only 4 showed a significant degree of pus when the catheterized bladder specimen was examined. One patient had difficulty in voiding. Surprisingly, only one patient had nocturia. Positive cultures were obtained from the bladder urine in eight patients. Escherichia coli was found in seven cases and Proteus vulgaris in the eighth.

Endoscopic Appearance.—Minimal findings on endoscopic examination of patients with mild posterior urethritis were hyperemia and edema of the bladder neck and posterior third of the urethra. Increased prominence of the longitudinal folds was noted, and hyperplasia of the urethral epithelium. With severer, perhaps longer standing, inflammation, the mucosa was paler and granular, and the epithelial hyperplasia had advanced into villus and polyp formation. Severe fibrosis, stricture, and urinary retention, which have been described in adults, were not encountered in this series. These patients tended to show chronic inflammatory changes in the trigone as well; the remainder of the bladder was remarkably normal-appearing, however, and confirmed the impression that the posterior urethra was the center of inflammatory change.

From the Department of Surgery, University of Oregon Medical School Hospitals and Clinics.

Read at the Fifth Clinical Session of the American Medical Association, Los Angeles, Dec. 4, 1951.

[1] Campbell, M. F.: Clinical Pediatric Urology, Philadelphia, W. B. Saunders Company, 1951.

[2] Roen, P. R., and Stept, R. R.: Urethritis in Girls, Am. J. Dis. Child. 72: 529 (Nov.) 1946.

Routine residual bladder urine determinations showed no evidence in any case of significant urinary retention. Significant degrees of bladder wall trabeculation were not found. Results of retrograde pyelography suggested a mild degree of unilateral pyelonephritic change in four instances; there was no evidence that the process was active at the time of examination. Exhaustive search was carried out without success in each case for urethral diverticula, ectopic ureteral orifices opening into the urethra, obstruction in the upper urinary tracts, or any other cause that might be an additional factor in inciting and maintaining urethral inflammation.

Microscopic Appearance.—Biopsies of the posterior urethra, just distal to the bladder neck, were taken with the infant resectoscope in two patients who appeared to have severe, chronic inflammation on cystoscopic examination. Microscopic study (figure) showed evidence of increased vascularity, hyperplasia of the transitional epithelium, and marked submucosal infiltration with cells of the lymphocytic series. Distinct lymphoid follicles were noted in some areas.

Transurethral section of posterior urethra. Marked infiltration with chronic inflammatory cells and increased vascularity are evident in the submucosal region. Hyperplasia of the transitional epithelium was more prominent in other portions of the specimen. (× 88).

TREATMENT

Treatment for chronic urethritis in women is directed along three channels: urethral dilatations, instillation of silver preparations or other bactericidal substances, and cauterization and/or electroresection. Urethral dilatations are said to "iron out" folds and crypts in the urethra and thus permit better drainage of infected areas. Whatever their action, the improvement in symptoms following dilatations is usually marked. Transient improvement is often noted following the urethral dilatation incident to a cystoscopy. We have found improvement to be more sustained if the patient received a total of three dilatations, the interim between treatments being 10 to 14 days, than if only one dilatation was carried out. Once rapport has been gained, treatments can be administered with only local anesthesia, consisting of 5% cocaine applied topically on cotton applicators, without evidence of more than minor discomfort in passage of sounds as large as no. 24-F. Urethral dilatations have been carried out on all patients in the present series and have formed the mainstay of treatment.

Instillation of silver preparations, particularly silver nitrate and mild silver proteinate solutions, into the bladder, is a traditional procedure; we have been unable to gather evidence to support its efficacy in treating lower urinary tract inflammations and have therefore discarded it. The instillation of nitrofurazone (furacin®) solution 1:6, as described recently by Sweetser and Harrison [3] for treatment of chronic urethrotrigonitis in women, was not effective in one moderately severe case in this series.

Cauterization with the fulgurating current by means of a unipolar electrode or the resectoscope has enthusiastic proponents among urologists, who treat chronic urethritis in women in this manner. Our results in treatment in two moderately severe cases in this series were quite inconclusive.

When positive cultures were obtained from the bladder on catheterization, an appropriate sulfonamide or antibiotic agent was administered for from five to seven days. While the administration of such an agent is usually successful in mitigating symptoms and decreasing pyuria, the ineffectiveness of drug therapy in permanently controlling the inflammatory process had already been emphasized in most cases.

RESULTS

In classifying the effects of therapy in each case, we have listed our results in three categories, i. e., good, fair, and poor. The results of therapy are not known in three patients who have been unavailable for subsequent observation. No treatment was given in another case, leaving 21 cases in which the efficacy of treatment can be categorized. A good result is arbitrarily defined for our purposes as one in which there have been less than two recurrences of symptoms following therapy. A fair result was one with two or more recurrences following treatment, but less than the average number that occurred prior to therapy. A poor result was demonstrated by no decrease in the number of recurrences. The last group might have been listed as failures, except that it was noted that recurrences, although frequent, were less severe than before treatment.

On the basis of the above classification, 16 patients (76%) had good results, 2 (10%) had fair results, and 3 (14%) had poor results. The significant finding in this analysis is that three-fourths of the patients showed marked improvement following therapy.

COMMENT

The causes of urethritis in young girls have been attributed to extension of infection from the vulva and vagina (either by direct extension through the short urethra or by lymphatic channels), fecal contamination from faulty personal hygiene, propagation from chronic upper urinary tract infection, metastatic infection from other sites in the body, and, possibly, direct lymphatic transmission of infecting organisms from the rectum to the urethra. Our finding of coliform organisms in all cases in which a positive urine culture was obtained lends some support to the belief that the infection originates in the intestinal tract and suggests that metastatic infection, particularly from the respiratory tract, was not a factor in this series. We have not found the variety of organisms that have been reported previously [1]; it is difficult to determine the role which the many rounds of drug therapy employed previously in these patients may have played in modifying the bacterial findings.

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[3] Sweetser, T. H., Jr., and Harrison, C. H., Jr.: Nitrofurazone in Treatment of Urethro-Trigonitis, J. Urol. 65:684 (April) 1951.

The history of many recurrences of infection suggests either that the patient has been subjected to multiple reinfections or that the organism is chronically harbored in the urinary tract. In favor of the first hypothesis is the absence of positive urine cultures in the majority of cases during remissions. However, most of the evidence favors the alternative, i. e., that pathogens persistently occupy the posterior urethral tissues and that exacerbations represent flare-ups of bacterial activity. Local conditions may be influenced by a decrease in general resistance from fatigue, exposure, or infections elsewhere in the body, modification in immune responses from these or more obscure causes, and, finally, local irritation from such sources as tight-fitting clothing, masturbation, and minor trauma. Several findings support this view. The pathological picture as seen in the figure suggests a chronic, long-standing process rather than a series of acute reinfections. When positive urine cultures are obtained over a long period in which a series of remissions and exacerbations have occurred, we have consistently obtained the same organism. This degree of consistency need not prevail if each recurrence were the result of a new infection.

If each of these patients showed obstruction, as evidenced by difficulty in voiding, slow starting, dribbling after urination, and significant residual urine, the mechanism of the therapeutic value derived from urethral dilatations could be better understood. Since only one patient in the series complained of difficult urination and there were no significant increases in residual bladder urine or in trabeculation of the bladder wall, obstruction can not be considered a major factor. Urethral strictures, which may be the outcome of many years of chronic posterior urethritis in women, were not encountered in any of these patients. Evidence for other benefits claimed to result from urethral dilatations, such as opening up of infected crypts and glands and breaking up of periurethral and paraurethral adhesions and strictures, is intangible and difficult to evaluate. We are reluctantly forced to conclude that the reason for improvement in chronic urethritis in patients subjected to urethral dilatations is not clear. However, since this procedure is the main factor in improvement in the majority of such cases, we should be even more reluctant to abandon its use.

The need for gentleness and patience in approaching the maximum caliber of the urethra should be emphasized. It is desirable, as a rule, to advance only to that size of urethral sound that passes readily at each sitting, to pass no more than three sounds at one session, and to allow a minimum of 10 days between dilatations. The urethra of the average 5-year-old girl, given topical anesthesia with 5% cocaine, will accommodate a no. 24-F sound without the patient giving evidence of more than mild discomfort at the end of an adequate number of dilatations. The tendency toward recurrences suggests that additional similar courses of therapy may be necessary until the initiating causes have been overcome.

The small number of reports dealing with this problem in children makes prognostication difficult. Since the condition in girls is so similar to that of women in symptomatology, gross and microscopic findings, and response to the same type of treatment, it is possible that appropriate treatment in childhood would prevent not only the gross fibrotic and obstructive changes that are observed in the adult but years of urethral discomfort as well. The prompt response to dilatations in the majority of cases supports the hope that permanent remissions may be obtained.

Only two cases have been found in which it was believed that the lack of response to urethral dilatations offered an indication for transurethral electrocoagulation of the inflammatory lesions at the bladder neck and posterior urethra. This procedure, effective in adult patients, was not remarkably successful in our hands, perhaps because we were not persistent enough in its use.

Urethral or bladder instillations of bactericidal solutions may have some value in preventing acute flare-ups from instrumental trauma. We have preferred to meet this possibility by administering small amounts of sulfonamide or antibiotic agents immediately prior to or following instrumentation, the sequence depending on whether or not urine cultures were desired.

Six patients complained of pain in the lower abdomen, loin, or costovertebral angle as an accompaniment of an acute exacerbation. We may readily interpret this symptom as evidence of concomitant cystitis, ureteritis, or pyelonephritis. As an alternative explanation, we may consider the reference of pain from the urethra. Burns [4] has pointed out that, in women whose only diagnosis is granular urethritis, pain may be "noted in the suprapubic area, right and left lower quadrants of the abdomen; both lumbar areas, sacral region, labia and insides of the thighs." The differential diagnosis of pain in such a situation may well require considerable judgment and experience; one wonders if the operative finding of a normal appendix in a child with symptoms considered typical of appendicitis may not sometimes suggest that the symptoms originated in a chronically inflamed posterior urethra. Appendectomy may be a relatively small price to pay for misdiagnosis; a woman is more apt to be subjected to an unnecessary gynecologic procedure or end up with the tenacious label of "neurotic" unless chronic urethritis is recognized.

From the viewpoint of differential diagnosis of lesions within the urinary tract, it may be pointed out that the symptoms of urethral diverticulum are entirely similar to those enumerated for chronic posterior urethritis, that careful and repeated search may be necessary to detect the presence of such a structure, and that, above all, recognition of a diverticulum is usually dependent upon the examiner's recognition of the possibility of its presence. The rarer possibility of an ectopic ureter emptying into the posterior urethra must also be kept in mind. Neurogenic bladder dysfunction may bear a superficial resemblance to chronic urethritis. The majority of diagnostic problems will be eliminated in the course of a thorough investigation with visualization of all parts of the urinary tract, either directly or by roentgenography.

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[4] Burns, E., and Butt, A. J.: Significance of Chronic Urethritis in Women, South. Surgeon 12:352 (Dec.) 1946.

Four patients in this series showed evidence of structural changes in one kidney, these changes being compatible with a diagnosis of chronic pyelonephritis. It is difficult to assess the relative roles of the kidney and the urethra in propagating urinary tract infection in these cases, particularly with reference to which organ first became infected. Two of these patients have shown no recurrence of infection since their urethral dilatations were carried out, which furnishes a presumptive indication that the urethra may have been the chronic reservoir.

The question is often raised by general practitioners and pediatricians as to how long a urinary tract infection should be treated as a general medical problem and at what point it should be recognized that the services of a urologist are required. Simple urinary tract infections do not require the services of a specialist; a complete urological investigation at the first evidence of pus cells in the urine is not medically justified nor economically feasible. Recurrent infections and failure to respond to the powerful drugs available today suggest that the problem is complex and that more information is needed about the functional capabilities and structural peculiarities of the urinary system. Lack of improvement and the need for further visualization and information about the urinary tract might well dictate the advisability of consultation with a urologist at this point.

One does not need the services of a urologist to diagnose the ordinary case of chronic posterior urethritis. The history of recurring episodes of urinary frequency, enuresis, fever, and pyuria is highly suggestive. The normal findings on physical examination, the tender urethra on catheterization, the absence of residual urine, and a clear bladder urine or marked disparity between catheterized and voided urine specimens confirm the diagnosis in the majority of cases. The urologist's skill is helpful in visualizing the lesion and in ruling out other urinary tract disease.

SUMMARY AND CONCLUSIONS

In 25 girls with symptoms referable to the urinary tract the primary urologic abnormality was chronic posterior urethritis. Although little attention has been paid to this condition in children in medical teaching or writing, it has been the largest single cause of urinary tract infection in girls in our recent experience. The commonest symptoms were episodes of urinary frequency, fever, enuresis, and urgency. Pain was referred to the suprapubic, loin, or costovertebral areas. Pus was usually present in voided urine during exacerbations; there was marked disparity between catheterized and voided urines. Cultures of catheterized bladder urine were negative in the majority of cases. Recurrences of urinary tract infection, based on exacerbations of chronic posterior urethritis, tended to be frequent and only temporarily affected by drug therapy.

Endoscopic studies of the inflammatory process at the urethrovesical junction showed varying degrees of chronic change, including hyperemia, edema, hyperplasia, and granular contraction. Severe fibrosis was not seen. Biopsy and microscopic study confirmed the gross impression of severe chronic inflammation.

Marked improvement in frequency and severity of recurrences was noted in the majority (76%) of patients who were treated by urethral dilatations. Sulfonamides or antibiotic agents were administered adjunctively in the cases in which positive urinary cultures were obtained. Topical instillations were not used; local electrocoagulation was not necessary in the majority of cases. A fair or poor response to treatment was obtained in 24%.

All positive cultures consisted of coliform organisms, suggesting the intestinal tract as a source for urinary tract invaders. It is likely that recurrences of infection are exacerbations of chronic urethritis rather than reinfections. In cases in which urethritis and chronic pyelonephritic changes in the kidneys coexisted, the meager available evidence indicates that chronic infection is retained in the urethra rather than the kidney.

The primary purpose of this presentation is to stress the importance of cognizance of the existence of chronic urethritis in girls, recognition of its symptoms, and at least cursory acquaintance with the principles of treatment. The general practitioner and the pediatrician mainly share the responsibility for recognition of the problem and its implications. The urologist has the equipment and training necessary to demonstrate the pathological process and rule out other major urinary tract lesions. An alert and cooperative attack on the problem will shorten the delay between onset of symptoms and diagnosis and prevent extensive, perhaps irreparable damage to the urinary tract.

University of Oregon Medical School.

Rubella and Congenital Defects.—While the role of rubella in the production of a wide variety of malformations is now well established, we still are lacking reliable figures on the probability that the average case of rubella in the average woman will result in an abnormal child. The available data on this point have been summarized by Swan, who estimates that the risk of a mother giving birth to a child with one or more congenital anomalies following the contraction of rubella during the first four months of pregnancy is approximately 74 chances in 100, whereas in the last five months of gestation the risk averages 23 chances in 100. Swan recognizes that these are probably overestimates. On the other hand, it seems unlikely that the risk involved in the first four months is below 30 chances in 100. The chances of an abnormal outcome following rubella early in pregnancy are therefore probably as great or greater than where dominant heredity is involved, but the order of magnitude of the two probabilities is quite similar. Perhaps the recognition of rubella as a cause for abortion is the opening wedge in a wider appreciation of the fact that a well rounded picture of the responsibilities of a physician should include some consideration of the problems of the next generation. This statement is by no means to be interpreted as a move for compulsory sterilization on genetic grounds, but as a suggestion that where plainly inherited disease is present in a family and the prospective parents of a defective child voluntarily request an abortion or sterilization, society faces a responsibility which has perhaps not yet been squarely met.—James V. Neel, M.D., *The Medical Clinics of North America*, March, 1951.

CLINICAL NOTES

CONTROL OF POSTPARTUM HEMORRHAGE

Ernest Myller, M.D., New York

Hemorrhage is one of the most frequent causes of postpartum death. Statistics being reliable only from larger hospitals, we may assume that many postpartum deaths are either unreported or designated otherwise. In a report from the Mayo Clinic,[1] the incidence of death from hemorrhage is 0.491 per 1,000 births, an average of 1 case per 2,000 deliveries. Postpartum hemorrhage in a large Brooklyn hospital caused death in 34 of 37 cases of obstetric fatality. It can only be conjectured how many more occur in institutions with lower standards.

There are standard methods of treating postpartum hemorrhage. It must be assumed from the poor results reported that they are not always successful. The usual routine procedure is to endeavor to find out whether the uterus is empty or to establish other causes for the bleeding. By the time the examination is completed, the hemorrhage may become alarming. Posterior pituitary (pituitrin®) or ergot is given intravenously, the uterus is massaged, and in many cases valuable time is lost. Intrauterine packing is resorted to, which stops the bleeding for the moment. Blood transfusions are started. After a short time the bleeding may start again, seeping through the packing. Removal and reapplication of packing does not necessarily stop the bleeding and, in spite of concomitant transfusions, the patient may rapidly become moribund. It is the belief of Douglass [2] that when the first uterine packing is not successful, the uterus is probably ruptured. If such is the case, a second packing is definitely contraindicated. Greenhill [3] also advised against packing the uterus a second time, recommending immediate hysterectomy as the safer procedure.

Postpartum hemorrhage can be controlled, no matter what its cause, by a method described many years ago by Logothetopoulos in Athens.[4] His method involves a type of packing that he originally used after clamp hysterectomies. It was inserted into the pelvis after the uterus was taken out, allowing immediate removal of the clamps without any loss of blood. Logothetopoulos applied the same principle of hemostasis to control of bleeding from the postpartum uterus after considerable experience in his surgical cases had proved it efficient. He called the procedure "traction packing."

METHOD

A doubly folded quadrangular piece of gauze 36 in. (91 cm.) square and a gauze roll 4 in. (10 cm.) wide and 16 yd. (15 m.) long are required. The operator grasps the cervix with one or several tenaculum forceps and brings it down well to the level of the vulva. The blades of a vaginal speculum are helpful in spreading the cervical canal apart. The center of the quadrangular piece of gauze is inserted into the uterus by means of a sponge forceps. In contrast to the conventional method, it is not necessary to reach the fundus with this packing.

The four corners of the quadrangular piece of gauze protruding from the uterus are spread apart. The operator then packs the long strip of gauze into the gauze sack situated in the uterus. Carefully done, this produces a large round ball inside of the uterus. The size of this ball is always the same, being determined by the uniform amount of gauze strip used. Thus the whole procedure becomes automatic and not subject to individual alterations, an important point in an operation when time means everything.

The four corners of the quadrangular piece of gauze are grasped in one hand and pulled downward. The blood supply of the uterus is cut off and bleeding ceases at once. In order to maintain the downward traction, the gauze stem is run through a thick ring pessary, and the pessary is pushed upward against the vulva, which is protected by a piece of gauze. The ring is fixed in its position with a clamp (fig. 1).

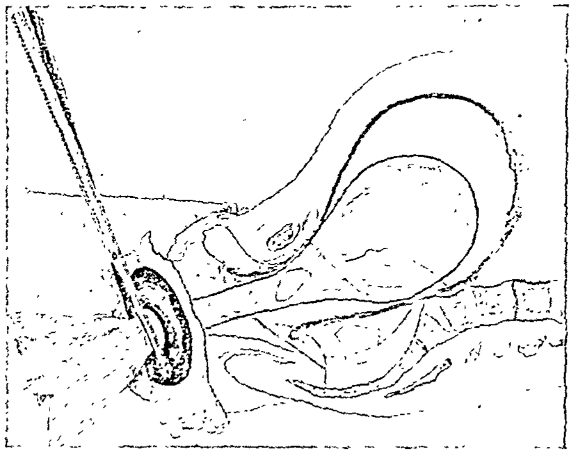

Fig. 1.—Gauze packing in place in the uterus. The traction is maintained by clamping the protruding gauze below the thick ring pessary pushed against the vulva.

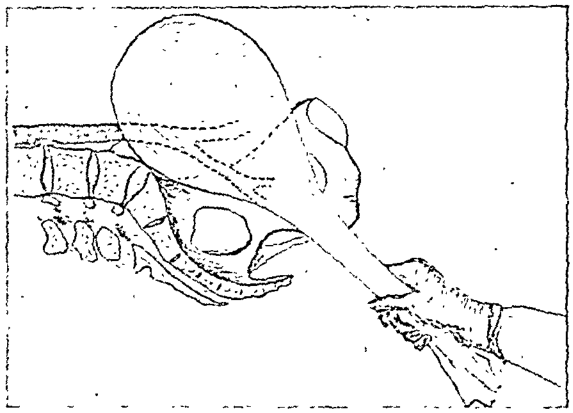

Fig. 2.—Compression of the hypogastric vessels when traction is applied to the gauze packing.

Conventional packing is an attempt to compress the open sinuses and blood vessels in the wall of the bleeding uterus. To be sure, the packing itself may produce a contraction, and only in such cases will it be effective. On the other hand, traction compresses the uterine vessels against the pelvic wall, interrupting the blood flow to the uterus completely (fig. 2). If the uterus is atonic,

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From the Department of Obstetrics and Gynecology, New York University Medical College.

[1] Hunt, A. B.: Massive Obstetric Hemorrhage Requiring Hysterectomy, Am. J. Obst. & Gynec. 49: 246-252 (Feb.) 1945.

[2] Douglass, L. H., in discussion of Beacham, W. D., and Beacham, D. W.: Rupture of the Uterus, Am. J. Obst. & Gynec. 61: 824-837 (April) 1951.

[3] Greenhill, J. P.: in Yearbook of Obstetrics and Gynecology, Chicago, The Yearbook Publishers, Inc., 1950, p. 241.

[4] Logothetopulos, K.: Gynäkologische Chirurgie, Berlin, Julius Springer, 1939.

there is in addition to this hemostatic effect the oxytocic effect of anemia, which is produced by compression of the arteries. Furthermore, it is possible that pressure upon Frankenhauser's ganglion stimulates the uterine muscle to contract by way of the autonomic nerves. It is obvious that the cause of the bleeding does not influence the effectiveness of this packing. Wherever the bleeding comes from, it will be stopped. This packing is inserted with relative ease, far more readily than a conventional packing, with no need to fill the uterine cavity completely, and the procedure is rapid and precise.

This packing is indicated only in cases of severe hemorrhage, after simpler procedures have been attempted and the vagina and cervix examined as possible sources of bleeding. Its purpose is to control bleeding immediately and to eliminate anxiety and haste. Once accomplished, additional measures such as transfusion and consultation may be obtained in leisure. As the patient's condition improves with or without transfusion, the subsequent procedure depends upon diagnosis. If the uterus is atonic and the bleeding has stopped entirely, the pressure is released by opening the clamp. After a short while the internal strip of gauze may be gradually removed, followed by the quadrangular piece of gauze, which may take out with it pieces of membrane left behind. The removal of the packing is almost painless.

If the hemorrhage has occurred after a difficult forceps delivery, a version, or in a case in which a cesarean section has been done previously, the possibility of a ruptured uterus must be considered. In this instance the packing may enter the abdominal cavity through the tear in the uterus, intentionally or by chance. No harm can be done by the possible additional trauma to the uterine wall, since it will be necessary to remove the uterus anyway. Once in place, traction packing allows time for careful preoperative preparation. There is no urgency for any operative intervention while the patient is in shock. Her chances for recovery after hysterectomy or more conservative procedures are much improved.

According to Greenhill, the mortality rate of uterine rupture is 58%. A very recent report from the Harlem Hospital [5] gives the mortality rate as 57.1%. Considering the excellent facilities and expert attention in this hospital, it may be assumed that in less well-equipped institutions the mortality rate may be much higher. With successful hemostasis and eliminated urgency, with time to recover from shock, mortality rates should be considerably reduced. Posner and his co-workers [5] stated, "Immediate transfusion and laparotomy, regardless of the degree of shock, is the surgical treatment of rupture of the uterus." Speaking of mortality, they add that with adequate blood transfusion and present-day antibiotics all patients might have survived. All these ends can be realized with traction packing; there is no need of immediate operation "regardless of the degree of shock." Actual experience with this packing is limited. Logothetopoulos has used it in only about 10 cases of postpartum hemorrhage, but has had excellent results in all. This packing procedure was studied in cadavers at the University of Athens.[6] The packing was inserted in the manner described, followed by traction. A dye was injected into the carotid artery under pressure and thereafter the pelvic organs were examined. All blood vessels except the uterine arteries were filled with the dye. It was interesting to note that the ureters were not compressed; they could be flushed through from above with very slight pressure.

SUMMARY

There are few new methods available to reduce the mortality rate of postpartum hemorrhage. Blood transfusion is often unsuccessful because hemostasis is difficult. Operations are often done with the patient in shock. Traction packing controls all postpartum bleeding immediately and therefore should reduce the mortality rate.

65 E. 76th St.

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5. Posner, L. B.; Smith, D. F., and Trambert, H. L.: 14-Year Survey of Parturient Ruptured Uterus at Harlem Hospital, New York J. Med. **51**: 641-644 (March) 1951.

6. Christopulos, C.: Anatomische Ergebnisse der Blutstillungsmethode nach Logothetopulos, Zentralbl. f. Gynäk. **57**: 807-809 (April) 1933.

BRACHIAL PLEXUS IRRITATION DUE TO HYPERTROPHIED OMOHYOID MUSCLE

A CASE REPORT

L. Gordon Fiske, M.D., Santa Barbara, Calif.

It is recognized that the results of surgery for the scalenus anticus syndrome have, in many cases, been disappointing. It is the purpose of this report to suggest that the possible cause for failure, in some of the patients, may be due to unrecognized pressure on the brachial plexus from either a taut or a hypertrophied lateral belly of the omohyoid muscle. It is not the intention of the author to discuss the scalenus anticus syndrome itself, since the subject has been dealt with exhaustively in the literature.

A 30-year-old Caucasian housewife was seen Feb. 8, 1951, complaining of a mass in the left supraclavicular fossa of 10 months' duration. Four months previous to her first visit, while reaching into a deep box with the left arm and turning her head to the right to speak to an acquaintance, she experienced a sudden onset of pain involving the left side of the neck and shoulder, and radiating down the outer aspect of the arm. The pain had increased in intensity and duration, was exaggerated by exercise, and was present day and night. Sharp exacerbations of the pain occurred when she turned her head to the right, with the neck either flexed or extended and when the arm was abducted. In recent weeks she had obtained some relief during sleep by not using a pillow.

The past and family histories were noncontributory. Physical examination revealed a normally well-developed, well-nourished woman with no abnormalities except those related to the condition being reported. With the patient in a sitting position and the arms at the sides, a swelling was noted that obliterated the left supraclavicular fossa. The swelling diminished when the shoulders were rotated anteriorly and became more prominent if the shoulders were rotated outward. A soft, ill-defined, nontender mass about 3 cm. by 5 cm. in diameter occupied the fossa. Pressure on the mass caused an increase in subjective pain. No bruit was heard over the mass. Objective sensory and motor abnormalities were absent. The blood pressure of the left arm was 130/80 mm. Hg and of the right, 120/80 mm. Hg. Roentgenograms of the cervical spine showed slight narrowing of the intervertebral disk at the level of C6 to C7. Localized hypertrophic changes were also present in the same region and in the anterior adjacent margins of vertebrae C5 to C6. There was no evidence of recent fracture, dislocation, or cervical rib. A roentgenogram of the chest showed no abnormality.

The erythrocyte count, the leukocyte count, and the hemoglobin determinations were within normal limits. The urinalysis was normal. The Kolmer serologic test was normal. The clinical impression was that the patient had lipoma of the left supraclavicular fossa. The pain was thought to be caused by pressure from the mass. On Feb. 14, a horizontal supraclavicular incision was made. When the platysma was cut and the sternocleidomastoid muscle retracted, the "tumor" was disclosed to be the hypertrophied lateral belly of the omohyoid muscle, which was approximately 2 cm. in diameter. As the medial insertion was approached, the diameter narrowed to that of the normal tendon. Pressure on the brachial plexus was obviously exerted by the hypertrophied muscle and was relieved by excision of the lateral belly. The histological report was "simple hypertrophy of skeletal muscle."

The patient was discharged from the hospital the day following surgery. She had already volunteered the information that her pain had been completely relieved. She has had repeated examinations, the last on Aug. 6, 1951, and there has been no recurrence of symptoms.

A review of the literature has revealed no case exactly similar to the present one, in that the hypertrophied omohyoid muscle caused a visible mass preoperatively; however, Dr. Alfred Adson [1] has made the following observation:

> The omohyoid muscle in people with long necks not infrequently compresses the brachial plexus and gives rise to paresthesias. Although this muscle usually is divided during the operation, I have purposely left the ends unsutured in several cases. I have done this after an experience with a patient who had undergone scalenotomy elsewhere for the syndrome; this patient also had a small cervical rib. Not being sure that the scalenus anticus muscle had been completely divided, I advised reoperation. I found everything to be satisfactory except that the omohyoid muscle was very tense and acted as a band running diagonally across the brachial plexus. I divided the muscle and closed the wound. The patient was relieved of her symptoms of paresthesia of the lower arm and hand.

Dr. Adson was apparently the first to make this observation, and yet the above quotation has not attracted the attention it deserves. Personal communications with several neurosurgeons, orthopedic surgeons, and Dr. Adson attest to the failure to recognize the association of abnormalities of the omohyoid muscle with pressure symptoms of the brachial plexus. Holden and associates [2] follow Dr. Adson's technique and state, "The omohyoid has frequently been found to be enlarged and taut. When so encountered it is incised and not resutured." So brief a mention of the condition is apt to pass unnoticed. The purpose of this report is to emphasize the importance of abnormalities of the omohyoid muscle to the scalenus anticus syndrome. It is suggested that division of the omohyoid muscle may result in a higher percentage of success in anterior scalenectomies, as this muscle, rather than the scalenus, may be the partial or entire cause of the patient's symptoms.

SUMMARY

An instance of brachial plexus irritation caused by the hypertrophied lateral belly of the omohyoid muscle and relieved by myotomy is presented. The relationship of the "taut" or hypertrophied omohyoid muscle to neuralgias similar to those of the scalenus anticus syndrome is emphasized.

22 W. Micheltorena St.

[1] Adson, A.: Surgical Treatment for Symptoms Produced by Cervical Ribs and Scalenus Anticus Muscle, Surg., Gynec. & Obst. **85**:687-699 (Dec.) 1947.

[2] Holden, W. D.; Murphy, J. A., and Portman, A. F.: Scalenus Anticus Syndrome: Unusual Diagnostic and Therapeutic Aspects, Am. J. Surg. **81**:411-416 (April) 1951.

PSYCHOSIS RESULTING FROM BARBITURATE WITHDRAWAL

REPORT OF TWO CASES

Norman C. Morgan, M.D., Warren, Pa.

There have been scattered reports of the addicting property of barbiturate drugs and the serious symptoms produced by their abrupt withdrawal. With the excellent work of Isbell and co-workers,[1] the concept of barbiturate addiction and of the barbiturate withdrawal syndrome has become more specific. The use of barbiturate drugs as a supplement to or as a substitute for narcotics in drug addicts has been frequently observed. Hewitt [2] recently reported three cases occurring among patients in mental hospitals specializing in the treatment of narcotic addiction. Barbiturate addicts are admitted to state hospitals relatively infrequently. Unless physicians attending such patients are constantly alert to the possibility, the diagnosis of barbiturate addiction may be overlooked or dangerously delayed.

The purpose of this paper is to report the cases of two barbiturate addicts who were admitted to a state hospital. For the first patient, the history of excessive use of barbiturates over a six year period was available at the time of his admission. The second patient was admitted as an alcoholic. During his lucid period after admission and before the onset of acute symptoms, this patient was able to give a history of excessive use of barbiturates for one year. The sudden onset of acute psychosis with convulsions, 72 hours after admission, made further study difficult; however, on specific detailed questioning, the patient was able to give a history of alcoholism and of addiction to pentobarbital (nembutal®), secobarbital (seconal®) sodium, and phenobarbital sodium for over a year.

Many physicians erroneously think of the syndrome as one of barbiturate toxicity rather than a withdrawal syndrome. This distinction is, of course, vital, since the best treatment available at present is the continued administration of a barbiturate (e. g., pentobarbital) with a gradual reduction in its dosage. Those who continue to think in terms of toxicity only cause aggravation of the symptoms by withholding barbiturates and attempting to secure sedation with other hypnotics. Because of unfamiliarity with the syndrome, the course of the illness was unexpected by the attending physician, and the treatment was not clearly outlined from the beginning. The following summaries will reveal the advantage of early diagnosis and sustained treatment in these cases.

REPORT OF CASES

Case 1.—The patient, a 47-year-old white man, had suffered from duodenal ulcers with intermittent stomach distress for 10 years, prior to which he had been an intermittent alcoholic. Although exact dosages were not learned, it was known that the patient had taken barbiturates steadily during the past six to nine years. One pharmacist was reported to have furnished 100 seco-

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From the Department of Welfare, Warren State Hospital.

[1] Isbell, H., and others: Chronic Barbiturate Intoxication: Study, Arch. Neurol. & Psychiat. **64**:1 (July) 1950.

[2] Hewitt, R. T.: A Psychosis with Barbiturate Withdrawal, J. Nerv. & Ment. Dis. **112**:526 (Dec.) 1950.

barbital sodium tablets a month on the basis of a prescription written nine years prior to the present illness. Withdrawal was started at home on May 1, and, in the evening, on May 2, the patient had a convulsion. On May 4, visual hallucinations were noted, and the patient had another convulsion. The psychotic symptoms rapidly became more intense. The patient had vivid hallucinations, was disorientated as to time and place, and failed to recognize his relatives. Replacement therapy with secobarbital sodium, 0.2 gm. every three hours, was started on May 5, at 8 p. m. Following the third dose, the patient seemed to recover. He had no medication for 24 hours preceding hospitalization, which took place at about 12:30 a. m. on May 8. At this time, the patient was acutely psychotic. After admission, amobarbital (amytal®) sodium, 0.22 gm., was administered on May 8 at 3 a. m. and on May 9 at 1:30 p. m., 10:30 p. m., and 11:30 p. m. In spite of this low dosage, by May 11 the patient's condition had improved considerably, and he was able to give a fairly satisfactory history at the staff meeting. During the next two days he adjusted satisfactorily to the ward, and a chart was not kept. On May 14, he again became overactive and had tremors. He was given amobarbital sodium, 0.22 gm., on May 14 at 12:30 p. m. and on May 15 at 2 a. m. On May 16 and May 19, he slept seven hours each night without sedatives. He died suddenly on May 21, of fulminant lobar pneumonia.

Case 2.—The patient, a 35-year-old white man, began social drinking at the age of 23. Since he was 28, he had drunk excessively, at first drinking beer, but later consuming at least a fifth of whiskey daily. He had started to use pentobarbital in March, when he was hospitalized for 10 days for alcoholism. On discharge, he was placed on a maintenance dose of phenobarbital (0.06 gm.?) every four hours and an unknown amount of pentobarbital four times a day. The amount he ultimately consumed is not known, except that he purchased barbiturates in bottles of 100 capsules on prescription from three different physicians. For at least three months prior to his admission in November, he had been drinking heavily.

On admission to the hospital, on Nov. 22, the patient was so heavily under the influence of whiskey and paraldehyde that he was not ambulatory. For the next 72 hours he appeared to be a "typical" alcoholic patient, exhibiting much "nervousness" but no psychotic symptoms. During this interval, he was given paraldehyde as a sedative and vitamin therapy. Seventy-two hours after admission, he had a severe, epileptiform convulsion. As soon as the seizure was over, on Nov. 25, at 9 p. m., the history of his use of barbiturates was obtained. He had two more convulsions on Nov. 26, the first at 1 a. m. and the second at 12:15 p. m. He was given pentobarbital, 0.2 gm., after the first convulsion and five hours later. Pentobarbital, 0.1 gm., was administered four times on Nov. 26 but only three times on Nov. 27, the morning dose having been omitted by an attendant accustomed to thinking of pentobarbital as a drug to be given as needed to achieve sedation. On Nov. 28, the patient was given pentobarbital, 0.2 gm., at noon to compensate for the omitted morning dosage. At 1:30 p. m., he suddenly began to hallucinate and become combative, believing that he could hear his mother's voice and could see his children in the corridor. Morphine sulfate, 16 mg., and scopolamine (hyoscine) hydrobromide 0.4 mg., were administered at 6:45 p. m. and 10:50 p. m. and, on Nov. 29, at 2:45 a. m. During this time the patient remained acutely disturbed and hallucinated in seclusion. Administration of pentobarbital was resumed on Nov. 29, and the patient was able to spend some time in bed in the ward. On Nov. 30, his condition had greatly improved, and, on Dec. 1, he no longer had psychotic symptoms. Although he was somewhat restless, he was able to read. There was a gradual reduction of the pentobarbital dosage, and administration of the drug was discontinued on Dec. 9; at this time, the patient was able to recall much of his behavior, although he had no memory of one 48 hour period during his illness.

Both of these cases are particularly interesting because of the reluctance of physicians unfamiliar with the syndrome to administer barbiturates in sufficiently high dosage over a sufficient period of time. Both cases illustrate that too early reduction in barbiturates results in relapse. The exact dosage is dependent on the clinical picture and extent of the addiction. Pentobarbital, 0.1 gm. four times a day, usually constitutes an adequate dosage at first. The second case illustrates that morphine and scopolamine hydrobromide are of little benefit in this disorder.

SUMMARY

Two patients with barbiturate syndrome seen in a state mental hospital are described and discussed for the purpose of drawing attention to this relatively unfamiliar clinical picture. The necessity for early recognition and sustained adequate replacement treatment with gradual withdrawal is emphasized. The distinction between barbiturate toxicity and the barbiturate syndrome is considered worthy of restatement.

COUNCIL ON FOODS AND NUTRITION

The following statement was prepared at the request of the Council on Foods and Nutrition and others. It was adopted without dissent as reflecting a summary of current evidence and the views of those present at a conference held at the Agricultural Experiment Station of the University of Minnesota, St. Paul, Minn., on May 27, 1952. More than 50 persons participated in the conference. Among these were representatives of industries concerned, of the American Veterinary Medical Association, the American Medical Association, the U. S. Department of Agriculture, the Food and Drug Administration, and Livestock Sanitary Boards, Departments of Health, and Agricultural Experiment Stations of some states in which the subject matter constitutes a practical problem.

James R. Wilson, M.D., *Secretary.*

BIOLOGICAL EFFECT OF TRICHLOROETHYLENE-EXTRACTED SOYBEAN OIL MEAL

The soybean has rightly been accepted for a long time as a valuable component of diets of animals and humans. In animal feeds the defatted residue of soybeans continues to be one of the most valuable sources of protein. The removal of oil from soybeans is carried out commercially either by pressing or by extraction with fat solvents. For the latter purpose a special grade of purified naphtha is employed successfully on a large scale, and the defatted meal thus produced is used extensively for various industrial purposes and in diets of man and animals. No evidence of harmful effects produced by naphtha-extracted soybean oil meal has been presented when the meal is used according to recommended feeding practice.

During the last few years another solvent, trichloroethylene, has been introduced in several smaller extraction plants in the United States for the removal of oil from soybeans. One of the principal advantages claimed for the use of trichloroethylene is the fact that in comparison with naphtha it is relatively nonflammable, thus requiring less extensive operational control measures. Trichloroethylene has been used for similar purposes earlier in Great Britain, Germany, Italy, and, recently, Japan.

Soon after the commercial introduction of the trichloroethylene process for the production of soybean oil meal there were reported in this country cases of a hemorrhagic disease among some cattle which had consumed this product for variable periods of time. In some areas the incidence of morbidity and mortality has been high, and in many cases it could be clearly established that trichloroethylene-extracted soybean oil meal was one of the constituents of the ration of the affected animals.

This experience is similar to that reported by Stockman in Great Britain in 1916 and since that time by others in Germany, Holland, Italy, and Japan. It has been possible in several instances to produce experimentally a hemorrhagic disease in cattle and calves by feeding them trichloroethylene-extracted soybean oil meal. On the other hand, experiments are on record that agree with observations made on farms where the feeding of trichloroethylene-extracted soybean oil meal in amounts up to 3 lb. per day has been well tolerated by cattle for periods exceeding 200 days. Evidently, not all lots of trichloroethylene-extracted soybean oil meal have the same effect quantitatively on cattle.

The symptoms of the disease in cattle are essentially those of an aplastic anemia with a marked reduction of leukocytes, neutropenia, relative lymphocytosis, a decrease in circulating platelets, erythrocytes, hemoglobin, and various degrees of hypoplasia of the bone marrow. The mucous membranes of the animals reveal petechial and ecchymotic hemorrhages, and epistaxis and hemorrhages from the rectum, vulva, and prepuce are frequently observed. The latter symptoms are accompanied by elevated body temperatures and frequently followed by death within a few days. Necropsy reveals extensive hemorrhages throughout the body. Fatal attacks of this disease may occur after the feeding of trichloroethylene-extracted soybean oil meal has been discontinued for several weeks. No effective treatment of the affected animals is known at present.

Recent observations made on farms as well as some experiments suggest that under certain conditions a severe hemorrhagic disease of sheep is associated with the feeding of trichloroethylene-extracted soybean products. Fatal aplastic anemia and extensive hemorrhagic lesions have developed in a horse following the experimental feeding of trichloroethylene-extracted soybean oil meal.

In view of the evidence referred to, it is suspected that trichloroethylene-extracted soybean oil meal contains some agent that is toxic to some species. Residual trichloroethylene as such is apparently not responsible for the effects of the meal. The toxic agent has as yet not been identified, and hence there are no chemical tests available for its detection. It appears to be transmitted through the bovine placenta, but no reliable evidence is available concerning its accumulation in the tissues of cattle or its transfer into the milk. These questions, however, should be studied and carefully considered in relation to the possible effects of consumption of animal products by man.

Studies on this problem have been handicapped to date by the lack of a biological test system using other than the bovine species, but they should be continued until the toxic agent, its mode of action and possible measures for its detection, control, and prevention have been recognized. In view of these developments, it is indeed fortunate from a practical standpoint that the production of trichloroethylene-extracted soybean oil meal was never more than a small percentage of the total tonnage of soybeans processed and that its production has now virtually been suspended.

ACCEPTED FOODS

The following product has been accepted as conforming to the rules of the Council.

James R. Wilson, M.D., *Secretary.*

Griffith-Durney Company, Los Angeles.

Carnation Strained Salmon for Babies. Ingredients: Chum salmon fillets, water and table salt (NaCl).

Analysis (submitted by manufacturer).—Total solids 21.61%, moisture 78.39%, ash 0.94%, fat (ether extract) 1.84%, protein (N × 6.25) 18.55%, carbohydrates (by difference) 0.28%.

Vitamins and Minerals	*Per 100 Gm.*
Vitamin B_{12} activity	10.0 μg
Iodine	Trace
Fluorine	4 ppm

Calories.—0.91 per gram; 25.5 per ounce.

Use.—For use in the feeding of infants and young children.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

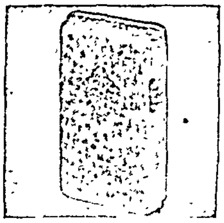
APPARATUS ACCEPTED

The following additional products have been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

Ralph E. De Forest, M.D., *Secretary.*

Paravox Hearing Aid, Model D "Top-Twin-Tone"

Manufacturer: Paravox, Inc., 2056 E. 4th St., Cleveland 15.

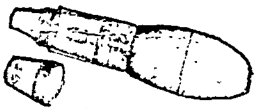


Paravox Hearing Aid, Model D "Top-Twin-Tone"

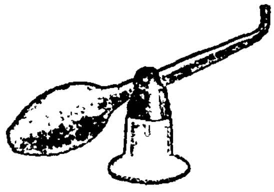
The Paravox Hearing Aid, Model D "Top-Twin-Tone," is an electric instrument designed to assist the hard of hearing. It measures (without clothing clips) 73 by 45 by 19 mm. and weighs (with batteries, cord, and receiver) 100 gm. Its most unusual feature is the dual microphone, consisting of two matched microphone crystals. Wiring diagrams show that in this method of construction each crystal drives one-half of an elongated diaphragm, providing a somewhat wider range of frequency response than can be obtained from a single crystal.

DeVilbiss Powder Blowers, Models 38 and 119

Manufacturer: The DeVilbiss Company, Atomizer Division, P.O. Box 552, Somerset, Pa.



Model 38



Model 119

DeVilbiss Powder Blowers

The DeVilbiss Powder Blowers, Models 38 and 119, are devices recommended for use in the administration of penicillin and similar medicaments in dust form. Model 38, pocket size, is the smaller. It weighs 57 gm. (2 oz.) unpacked and 71 gm. (2½ oz.) packed. Model 119 weighs 85 gm. (3 oz.) unpacked and 142 gm. (5 oz.) packed.

Evidence indicating that these devices were satisfactory in construction and operation was obtained from sources acceptable to the Council.

Cosmo Infra-Red Lamp #910

Manufacturer: Cosmo Sun Ray Products Company, Inc., 401 Lafayette St., New York 3.

The Cosmo Infra-Red Lamp #910 is a device for applying radiant heat. The heating unit consists of a coil of nichrome wire embedded in a cylindrical mass of refractory material. This is mounted in a roughly parabolic reflector on an upright stand. The stand is provided with casters so that it can be moved about on the floor. The fastenings permit adjustments of the height and direction of the lamp. The manufacturer states that the lamp has been constructed according to specification 7-124-100 of the United States Armed Services' Medical Procurement Agency and has been accepted by the Underwriters' Laboratories.

The aluminum reflector is 35 cm. (14 in.) in diameter, and the lamp housing can be raised to a height 152 cm. (5 ft.) above the floor. The heating unit may be operated on either direct or alternating current at 110 to 120 volts and it draws 600 watts.

From acceptable sources the Council obtained evidence indicating that the device was sound in construction and effective in operation.

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FUNGUS INFECTIONS COMPLICATING ANTIBIOTIC THERAPY

Weinstein[1] reported in 1947 five cases in which, during the course of specific antibiotic therapy, there developed new infections due to organisms that were not susceptible to the agent being used for the primary disease. It appeared that when one group of organisms is suppressed others that are present may multiply more rapidly, invade tissue, and cause a superinfection. Harris,[2] in 1950, reported on 91 female patients and 44 male patients treated with aureomycin and/or chloramphenicol for chronic brucellosis. These antibiotics, while effective in accomplishing a cure of brucellosis, produced in a large percentage of female patients and in a much smaller percentage of male patients side-effects of a type and severity not previously reported. Nausea, vomiting, epigastric distress, heartburn, and diarrhea occurred in 60.7% of the female patients and in 19.3% of the male patients. The frequency and the severity of gastrointestinal symptoms were greater with aureomycin therapy than with chloramphenicol. In one-half the patients taking from 2 to 4 gm. of either antibiotic daily the stools became odorless, but normal odor returned soon after medication was stopped. Lesions of the mucous membranes of the mouth, pharynx, cheeks, lips, and tongue were noted. In all of the 24 female patients with oral lesions there was an accompanying vaginitis and vulval and anal irritation. Candida albicans was identified in culture in all of the patients with perianal, vulval, and vaginal irritation following treatment with aureomycin. Harris expressed the opinion that C. albicans may multiply at an increased rate and perhaps even gain virulence following destruction of the intestinal flora by the action of aureomycin or chloramphenicol. There is also the possibility that virulent strains of C. albicans may grow strains capable of invading the more vital tissues.

Woods and his co-workers[3] observed 25 cases of moniliasis developing as a result of administration of penicillin, aureomycin, or chloramphenicol. The presence of Monilia was confirmed by culture. The patients had sore mouth, hairy tongue, thrush, or persistent diarrhea. In the patients with diarrhea, Candida was found growing abundantly in the stools. The authors felt that there was a causal relationship between the use of antibiotics and the appearance of monilial complications in these patients. In vitro studies by the same authors failed, however, to show that the rate of growth of four strains of Candida was either stimulated or suppressed by the antibiotics. They suggested that suppression of the bacterial flora that coexist with Candida and compete for nutrition in the same substrate was the probable cause of monilial overgrowth and host infection. Tomaszewski[4] studied 126 patients treated with chloramphenicol and aureomycin for side-effects. These were more pronounced in women than in men and developed more rapidly in patients previously treated with penicillin or streptomycin. Scrapings of the tongue showed in most of the cases a rapid disappearance of the normal bacterial flora and the establishment of a fungus flora usually composed of C. albicans.

In April, 1951, the Council on Pharmacy and Chemistry[5] of the American Medical Association requested that a warning statement be added to the labeling of aureomycin hydrochloride, chloramphenicol, and terramycin hydrochloride. The warning was to the effect that, while these antibiotics are highly bacteriostatic for many bacteria, they may cause suppression of susceptible bacteria and thus encourage the replacement by Monilia and other yeast-like organisms of the normal or abnormal bacterial flora. Although most of the infections caused were of little consequence, infrequent serious complications of moniliasis are reported. Thus, Oblath and his co-workers[6] reported six instances of pulmonary moniliasis. Zimmerman[7] described three cases of endocarditis in which on post mortem the causative organism in one case was found to be Candida and in the other two Aspergillus. Gausewitz[8] reported a unique case of C. albicans infection resulting in a chronic fatal illness in a 10-year-old boy. The prominent lesions were found in the myocardium, lungs, kidneys, and the thyroid.

Lipnik and his co-workers[9] felt that the diagnosis of complicating moniliasis in many of the reports was probably not justified. They point out that C. albicans is an endogenous organism that occurs in many persons as part of the normal respiratory and gastrointestinal flora. The isolation of the organism in striking quantities is a prominent finding in the great majority of those ingesting antibiotics whether or not there are symptoms or reactions of any kind. They emphasize that the overwhelming majority of such persons do not have moniliasis. The in vitro experiments performed by them demonstrated that none of the crystalline antibiotics showed any stimulatory effects on C. albicans. They found that in vitro enhancement of the growth of C. albicans by material obtained from aureomycin capsules was due to the inert phosphate content of such capsules.

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[1] Weinstein, L.: The Spontaneous Occurrence of New Bacterial Infections During the Course of Treatment with Streptomycin or Penicillin, Am. J. M. Sc. **214**: 56-63 (July) 1947.

[2] Harris, H. J.: Aureomycin and Chloramphenicol in Brucellosis, with Special Reference to Side Effects, J. A. M. A. **142**: 161-165 (Jan. 21) 1950.

[3] Woods, J. W.; Manning, I. H., Jr., and Patterson, C. N.: Monilial Infections Complicating the Therapeutic Use of Antibiotics, J. A. M. A. **145**: 207-211 (Jan. 27) 1951.

[4] Tomaszewski, T.: Side-Effects of Chloramphenicol and Aureomycin, with Special Reference to Oral Lesions, Brit. M. J. **1**: 388-392 (Feb. 24) 1951.

[5] Council on Pharmacy and Chemistry: Warning Statement to be Included in Aureomycin Hydrochloride, Chloramphenicol and Terramycin Hydrochloride Labeling, J. A. M. A. **145**: 1267 (April 21) 1951.

[6] Oblath, R. W.; Donath, D. H.; Johnstone, H. G., and Kerr, W. J.: Pulmonary Moniliasis, Ann. Int. Med. **35**: 97-116 (July) 1951.

[7] Zimmerman, L. E.: Candida and Aspergillus Endocarditis, with Comments on the Role of Antibiotics in Dissemination of Fungus Disease, Arch. Path. **50**: 591-605 (Nov.) 1950.

[8] Gausewitz, P. L.; Jones, F. S., and Worley, G., Jr.: Fatal Generalized Moniliasis: Report of Case, Am. J. Clin. Path. **21**: 41-49 (Jan.) 1951.

[9] Lipnik, M. J.; Kligman, A. M., and Strauss, R.: Antibiotics and Fungous Infections, J. Invest. Dermat. **18**: 247-260 (March) 1952.

Kligman [10] stresses that, while the side-reactions to the antibiotics may be associated with moniliasis, they may also be expressions of various diseases, such as vitamin deficiency states, allergic reactions, bacterial and viral infections, and primary irritation. He insists that isolation of the organism is not always diagnostically decisive nor is the favorable response to iodide therapy per se diagnostic.

The occurrence of moniliasis as a complication of antibiotic therapy has been definitely established. Whether the avoidance of these reactions will be accomplished by the utilization of drugs that inhibit the growth of Monilia and yeast-like organisms or by addition of certain vitamins remains to be investigated. McVay and Sprunt [11] have demonstrated both by in vitro and by in vivo experiments that esters of parahydroxybenzoic acid possess a definite inhibitory effect on five strains of yeast.

PATHOGENESIS OF ACUTE RENAL FAILURE FOLLOWING INJURY

In the past decade clinical and experimental interest has developed in the renal syndrome known as "necrotizing nephrosis," "crush syndrome," "lower nephron nephrosis," or "hemoglobinuric nephrosis," which may follow clinical disturbances of widely varied origin, such as traumatic injuries, transfusion accidents, and drug poisoning. The clinical picture, while partly modified by the etiological factors, is essentially that of a rapidly developing renal insufficiency. The predominant pathological findings include tubular necrosis and obstruction of the tubules with heme pigment, cellular debris, or drug crystals. The lesions have been variously ascribed to toxic degradation products of hemoglobin or myohemoglobin, to proteolytic enzymes liberated by crushed tissue, and to local renal ischemia consequent to the circulatory disturbances of shock. The functional disturbances have been attributed to back diffusion due to structural or functional damage to the tubular wall, to interference to flow through the tubules by cellular and other debris, or to decreased filtration due to renal ischemia.

Difficulties have arisen in attempts to determine the pathogenesis and to correlate the clinical and functional aspects of the syndrome with the structural alterations in the tubule owing to the rather firmly entrenched notion that these lesions were confined to the distal portion of the nephron. A stimulating approach to these problems has recently been offered by Oliver, MacDowell, and Tracy.[1] Using an ingenious microdissection technique that permits inspection of the nephron in its entirety, these investigators have shown that in acute renal failure two distinct types of tubular injury are encountered in varying proportions, depending on the origin of the clinical insult. The first type, nephrotoxic necrosis, is the predominant lesion in renal failure following the injection of toxic substances excreted by the kidney, such as uranium or mercury bichloride. Structural changes are limited to the proximal tubule and consist of varying degrees of damage to the epithelial cells without disruption of the basement membrane. Both kidneys are equally affected, and all nephrons are involved. The picture is thus consistent with what one would expect to find when a foreign toxic substance is filtered through the glomerulus and absorbed by the cells of the proximal convoluted tubules, where the intracellular concentration leads to death of the cells. The basement membrane and the cells of the distal portion of the nephron, being functionless in regard to the toxic substance, are not affected. The second type of lesion, designated by Oliver and his associates as tubulorrhexis, is the predominant lesion in acute renal failure following crushing injuries or shock. It occurs at random among the nephrons and in any part of a nephron and is characterized by localized destruction of the entire tubular wall. In this lesion, the basement membrane is broken so that the lumen lies open to the intertubular connective tissue where an inflammatory reaction may occur. Debris or heme casts may be present in the lumen at the site of the break in the basement membrane but are more frequently seen in areas where the tubular epithelium appears perfectly normal.

Oliver and his associates attributed the tubulorrhexic type of lesion to renal ischemia secondary to circulatory collapse and have coined the term "ischemuric renal episode" to describe the clinical-pathological syndrome of renal ischemia and ischuria. They were able to reproduce such lesions in animals subjected to trauma or in which the renal artery was clamped for short periods of time. Following such procedures, a patchy renal ischemia could be readily demonstrated by the technique of Schlegel,[2] which involves illumination of the vascular bed by fluorescent dyes. They suggest that in this type of lesion various factors may contribute to the resultant oliguria, such as temporary decreased filtration; back-diffusion due to increased permeability of the tubule wall; leakage of tubule fluid into the interstitial tissue; intertubular edema, which by pressure on tubules and vessels impedes flow in the tubules and contributes to renal ischemia and lessened filtration; oncotic pressure of the interstitial fluid; and physical obstruction of the tubule lumens by solid matter or by the increased viscosity of the urine. In nephrotoxic necrosis the integrity of the basement membrane permits an orderly regeneration of the tubular epithelium. With tubular disruption, however, efforts at repair lead to fibrotic scars or markedly deformed nephrons. The scattered distribution of affected nephrons, however, may permit eventual recovery of normal renal activity by the restitution of those nephrons that suffered no significant damage. Since the number of nephrons affected is apparently directly related to the period of renal ischemia, the sooner the renal blood flow is increased the better the chance for ultimate recovery.

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[10] Kligman, A. M.: to be published.

[11] McVay, L. V., Jr., and Sprunt, D. H.: A Study of Moniliasis in Aureomycin Therapy, Proc. Soc. Exper. Biol. & Med. **78**: 759-761 (Dec.) 1951.

[1] Oliver, J.; MacDowell, M., and Tracy, A.: The Pathogenesis of Acute Renal Failure Associated with Traumatic and Toxic Injury: Renal Ischemia, Nephrotoxic Damage and the Ischemuric Episode, J. Clin. Investigation **30**: 1307, 1951.

[2] Schlegel, J. U.: Demonstration of Blood Vessels and Lymphatics with a Fluorescent Dye in Ultraviolet Light, Anat. Rec. **105**: 433, 1949.

The investigators suggest that the sudden increase in diuresis often noted during the stage of recovery may be due to increased filtration, possibly on the basis of relaxation of vascular spasm, occurring at a time when tubular absorption is still inadequate.

Oliver and his associates emphasize that acute renal failure following either toxic or traumatic injuries is invariably accompanied by disruptive tubular lesions. While a purely nephrotoxic lesion is theoretically possible with certain poisons, the authors demonstrate by animal experiments that circulatory disturbances secondary to such complications of the intoxication as excitement and depression, dehydration, and electrolyte imbalance must always result in focal cortical ischemia followed by tubulorrhexis. This would explain the failure of dimercaprol (BAL) therapy in certain specific intoxications and in all severe intoxications, since this drug would not obviate or relieve renal ischemia and its effects.

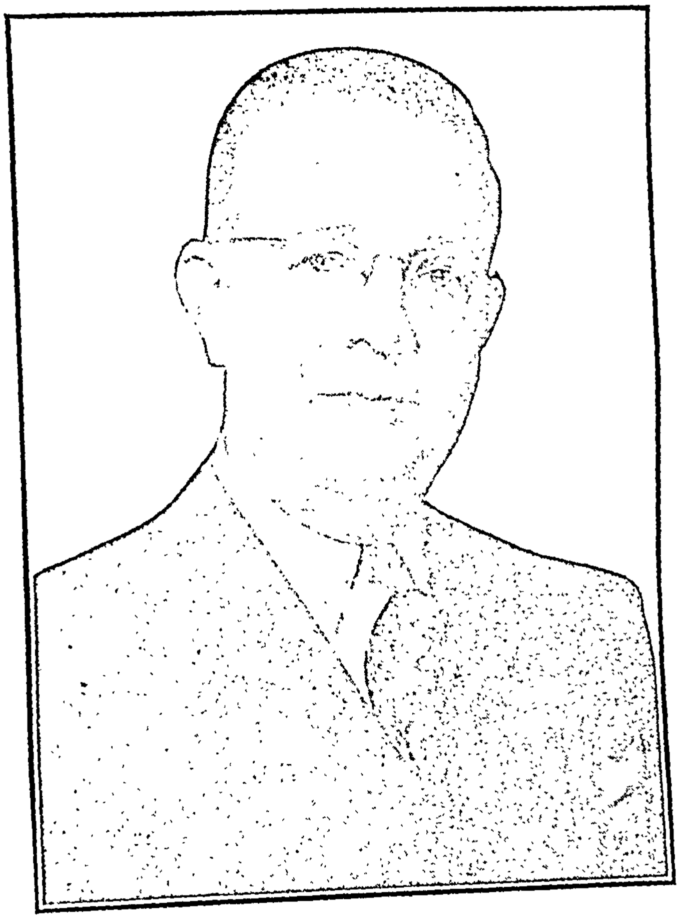
In summarizing their report, Oliver, MacDowell, and Tracy emphasize the futility of assigning a specific anatomic-pathological name to the abnormal kidney in acute renal failure, because this failure is the summation of various structural-functional lesions in several million nephrons. However, they point out that there is an essential unity of pathogenesis in acute renal failure from widely disparate clinical origins, for the important factor in determining the course and direction of the reaction in the kidney to the ill effects of traumatic and toxic injury is whether the ischemuric episode occurs.

TOXICITY OF TRICHLOROETHYLENE-EXTRACTED SOYBEAN OIL MEAL

Elsewhere in this issue of THE JOURNAL (page 760) is a report by the Council on Foods and Nutrition on the toxicity of trichloroethylene-extracted soybean oil meal. It seems clear that certain lots of this soybean oil meal exert a toxic effect on cattle and that the toxic substance appears to be transmitted through the bovine placenta. The toxic agent has not been identified, and no reliable evidence is yet available concerning its accumulation in animal tissues or milk. On the basis of information available to date it would seem advisable, until it has been shown that the toxic element does not accumulate in animal tissues or their products, to discontinue the use of trichloroethylene-extracted soybean oil meal as a feed for animals used in the production of food for human consumption.

DR. EDWARD J. McCORMICK—THE PRESIDENT-ELECT

The House of Delegates of the American Medical Association, at the 101st annual session in Chicago, June 12, elected Dr. Edward J. McCormick of Toledo, Ohio, to the position of President-Elect. Dr. McCormick has been a member of the Board of Trustees of the Association since 1946, is chairman of the Committee on Scientific Exhibit, and formerly was chairman of the Council on Medical Service and a member of the House of Delegates. He was born in Alger, Mich., Sept. 25, 1891, received his B.A. and M.A. degrees at St. John's University in Toledo and his M.D. at St. Louis University, then did graduate work in Chicago, New York, and in Europe. He interned and was house surgeon at St. Vincent's Hospital in Toledo, and since 1920 has been surgeon. He was chief-of-staff from 1939 to 1949 and has been president of the advisory board since 1947. Dr. McCormick was formerly attending surgeon at Mercy Hospital and since 1924 has been on the staff of Maumee Valley Hospital, where he has served as director of surgery, a member of the executive committee, and since 1934 as a member of the board of trustees. Formerly he was visiting surgeon to the Toledo Hospital. For many years he has been surgeon to the Wheeling and Lake Erie Railway (now the Nickle Plate Road). During World War I he served in the U. S. Army Medical Corps, being attached to the British Expeditionary Force in France; for a time he was on the surgical service at the U. S. Army Walter Reed Hospital in Washington, D. C. He was for many years a Lieutenant Commander in the Naval Reserve and Senior Surgeon in the U. S. Public Health Service Reserve. Formerly he was president of the Toledo Board of Health and for many years a director of the National Physicians Committee for the Extension of Medical Care.



EDWARD J. McCORMICK, M.D.
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

Dr. McCormick is a diplomate of the American Board of Surgery, a fellow of the American College of Surgeons and of the International College of Surgeons, a former president, councilor, and chairman of the surgical section of the Ohio State Medical Association, a former secretary, trustee, and president of the Academy of Medicine of Toledo and Lucas County. He is a director of the Business and Professional Mens' Association; a member of the Toledo area council, Boy Scouts of America, a former chairman of the Court of Honor, Toledo area, and a member of the National Council; a member of the Toledo Chamber of Commerce, of the Military Order of World Wars, the American Legion, Phi Beta Pi, Delta Phi Lambda, Alpha Omega Alpha, and of the Elks and Lions Clubs. He was on the board of directors of the Toledo City Manager League and was a member of the Toledo chapter of the American Red Cross and of the service committee of the American Cancer Committee. Dr. McCormick was awarded the Military Cross in Great Britain in 1919 after having served at the Reading War Hospital.

PAUL DUDLEY WHITE AWARDED DISTINGUISHED SERVICE MEDAL

Paul D. White, M.D.
Awarded Distinguished Service Medal

At the 101st annual meeting of the American Medical Association in Chicago, June 9, the House of Delegates awarded the Distinguished Service Medal of the Association to Dr. Paul Dudley White of Boston, an internationally known physician, teacher, and investigator. Dr. White was born June 6, 1886. He received his B.A. and M.D. degrees at Harvard University and interned at the Massachusetts General Hospital, where for many years he has been a distinguished member of the staff. He was a Harvard traveling fellow in Europe in 1913 and 1914, a teaching fellow in medicine at Harvard 1915-1920, an instructor from 1920-1933, an assistant professor for the next three years, a lecturer for the next two years, and in 1946 became clinical professor. During these years he also engaged in medical research and practice, especially in the field of heart disease.

He was house physician at the Massachusetts General Hospital from 1914 to 1920, associate physician until 1928, then physician until 1949. He was chairman of the committee on cardiovascular diseases of the National Research Council from 1940 to 1946, was appointed executive director of the National Advisory Heart Council, and also as chief consultant to the National Heart Institute of the Public Health Service in 1948. He served with the Office of Scientific Research and Development. In 1916, during World War I, Dr. White was a medical officer with Base Hospital No. 22 of the British Expeditionary Force and from 1917 until 1919 was with the American Expeditionary Force in France; in the latter year he was also a medical officer with the American Red Cross in Greece. He was chairman of the American Medical Mission to Czechoslovakia in 1946 and to Greece and Italy in 1948. Dr. White is widely sought as a teacher and lecturer before medical groups. He delivered the St. Cyres lecture of the National Hospital for Diseases of the Heart in London in 1935 on congestion without myocardial failure, the Alvarez Lecture before the American Gastroenterology Association in 1937 on differential diagnosis of cardiac and gastrointestinal disorders, the annual Hermann Biggs Lecture before the New York Academy of Medicine in 1940, and the principal address at the observance of Ether Day at the Massachusetts General Hospital in 1936. He was elected President of the American Heart Association in 1942, after having served that organization also as vice president. He was secretary of the Section on Pharmacology and Therapeutics of the American Medical Association from 1921 to 1924, chairman, 1924-1925, a member of the House of Delegates representing that section in 1927, and was chairman of a special committee of the American Medical Association that presented a comprehensive exhibit on heart disease at the Philadelphia session in 1945. Dr. White has been awarded honorary degrees by Charles University in Prague, and Athens University and Salonika University in Greece. He is a member of the Royal Society of Medicine in England, the cardiology societies of Great Britain, Ireland, France, Mexico, Brazil, Argentina, and Czechoslovakia, of the American Association of Physicians, American College of Physicians, the American Society of Clinical Investigation, the American Clinical and Climatologic Association, the American Heart Association, the American Medical Association, Alpha Omega Alpha, and the Aesculapian Club. Dr. White is the author of a textbook on heart disease that has gone through several editions, of "Heart Disease in General Practice," of "Electrocardiography in Practice" (Ashton Graybiel), and a contributor of many articles to medical journals.

ORGANIZATION SECTION

POSTHUMOUS AWARD TO HOWARD BLAKESLEE

The American Medical Association on June 11, awarded, posthumously, a gold medal and citation to Howard W. Blakeslee, Associated Press science editor, who died, May 2, at his home in Port Washington, L. I., N. Y. The award was created by the Board of Trustees to honor "a distinguished layman who has served to advance the ideals of American medicine and who has contributed notably to the public welfare." The first such award was made in 1948 to Father Alphonse Mary Schwitalla, who served many years as dean of the school of medicine of St. Louis University.

Howard Blakeslee

The Board of Trustees nominated Howard Blakeslee for the award, and its action was confirmed unanimously by the House of Delegates. In nominating Mr. Blakeslee, Dr. Dwight H. Murray, chairman of the Board of Trustees, read a memorial, which was in part as follows:

"A science writer of fine competence and high integrity passed from the newspaper scene with the sudden death on May 2, 1952, of Howard Blakeslee, 72-year-old science editor for the Associated Press. As a writer, he was a friend of the American Medical Association and the profession generally. He was loved by doctors because, in a long newspaper career, 25 years of which were devoted to science writing, Howard Blakeslee never betrayed a confidence. And, above all, his stories about medicine and medical research were accurate. He earned this highest tribute that can be paid to a medical science writer.

"Mr. Blakeslee received many honors for his achievements in the field of science reporting, including the Pulitzer Prize for Reporting in 1937. Our nation offers no more striking example of the hope and promise of this country to an industrious, intelligent youth, bent on a newspaper career, than is presented in the life of this distinguished AP writer. The heritage he left among the men of science is an everlasting tribute to his memory."

FEDERAL MEDICAL LEGISLATION

Special Pay for Military Physicians

Representatives Rivers of South Carolina and Vinson of Georgia have introduced identical bills proposing to amend the Career Compensation Act of 1949 to extend the application of the special-inducement pay provided thereby to physicians and dentists. The bills are H. R. 7976 and H. R. 7995. These bills would extend, until June 30, 1953, the presently existing special $100 monthly pay for physicians and dentists in the commissioned services. The bills are identical with S. 3019, previously introduced by Senator Hunt.

Water Pollution

Senator McKellar of Tennessee introduced S. 3267, which would amend the Water Pollution Control Act to raise the limit on the size of the loans that may be made under the act for the purpose of assisting local governmental agencies in the construction of works for the treatment of sewage and other wastes. The present Water Pollution Control Act authorizes $22,500,000 annually for five years for loans to local communities for construction of sewage treatment plants. This proposed amendment would alter an existing provision limiting loans to 33⅓% of the cost of such facilities, or $250,000, whichever is smaller. It would also raise the limitation to 50% and would entirely eliminate the $250,000 ceiling. No funds have ever been appropriated for loans under the existing authorization.

STATE MEDICAL LEGISLATION

Louisiana

Bills Introduced.—H. 390, proposes the creation of a **commission on chronically ill persons** to make a thorough investigation and study of the extent, nature, and consequences of chronic illness throughout the state with a view to the development of additional facilities to the extent that the need therefor is indicated. H. 756 and S. 212 to amend the **Workmen's Compensation Act,** propose to require the employer to furnish reasonable medical, surgical and hospital services and medicine not to exceed $500 in value unless the employee refuses to allow them to be furnished. H. 812 and H. 944 propose to require the **vaccination of dogs against rabies** at least once each year. H. 864, proposes to make it unlawful for anyone operating a **nursing home** to administer, without a doctor's prescription, any sleeping potion or medicine or give hypodermic injections to any inmate thereof. H. 1009, proposes that **certified copies of hospital records** of state and veterans institutions may be received as evidence in court as prima facie proof of the contents thereof, provided that the party against whom the record is sought to be used shall have the right to summon and examine those making the original of said record as witnesses under cross-examination. H. 1154 and S. 194 propose to put on a prescription basis the sale and distribution of **barbiturates and other hypnotic and somnifacient drugs** and also central nervous system stimulants, such as amphetamine and desoxyephedrine. H. 1176, to amend the state income tax law, proposes to authorize taxpayers to deduct expenses paid during the taxable year not compensated for by insurance or otherwise for **medical care of the taxpayer** and his spouse or his dependents to the extent that such expenses exceed 5 per cent of the adjusted gross income. H. 1220 and S. 281 to amend the law **relating to optometry,** propose that no person, firm or corporation shall advertise the examination or treatment of the eyes, the furnishing of optometrical services, or the furnishing of a lens, lenses, glasses or frames or fittings thereof. S. 279, to amend the law relating to the **state board of health,** proposes that five members of the board shall be duly qualified and registered physicians. S. 294, proposes to make it **unlawful** for any individual employed by any hospital or sanitarium not operated for profit **to participate in any strike.**

Michigan

Bill Introduced.—S. R. 29, proposes the creation of a special committee to survey and evaluate the problems involved in providing adequate medical service in industrial plants on all shifts with a view to the need for furnishing medical assistants in such plants.

FUTURE MEETINGS OF THE ASSOCIATION

The 1955 Annual Session of the American Medical Association will be held in Atlantic City, N. J. The 1955 Clinical Session will be held in Boston. Specific dates for that meeting, however, have not yet been chosen. The Clinical Session is usually held early each December. Next December physicians attending the 1952 Clinical Session will journey to Denver, where plans are already being made for an excellent scientific program. In 1953 the Clinical Session will be held in St. Louis, and Miami has been named as the site of the 1954 Clinical Session.

The summary of federal legislation was prepared by the Washington Office of the American Medical Association and the summary of state legislation by the Bureau of Legal Medicine and Legislation.

MEDICAL NEWS

CALIFORNIA

Conference on Medical Care Administration.—A conference will be held June 26-27 on the Berkeley campus of the University of California to consider the need for an instructional program in the medical care field, according to Dr. Edward S. Rogers, professor of public health and medical administration. Dr. Rogers points out that more than 75 million persons in the United States, almost half the population, are now covered by some form of health insurance, and the number of people employed in the administration of these plans is constantly growing. The conference hopes to determine whether the field of medical care should be recognized and established as a part of the university curriculum. Dr. Warren Palmer Dearing, deputy surgeon general, United States Public Health Service, will head a panel of speakers.

DISTRICT OF COLUMBIA

Personal.—Dr. Alfred E. Brigulio has been appointed coordinator for medical care services by the Office of Civil Defense of the Government of the District of Columbia, succeeding the late Dr. Oscar B. Hunter Sr.

Psychiatric Essay Contest.—The Washington Psychiatric Society is sponsoring an essay contest for physicians in psychiatric residency training in the Washington, D. C., metropolitan area. The paper, which may be on any subject in psychiatry or a closely related field, must not exceed 6,000 words and must be submitted before Feb. 1, 1953. First prize will be a cash award of $100. Winners will be invited to present their papers before the society. For information, address Dr. Seymour J. Rosenberg, Secretary, 3730 Cumberland St., N. W., Washington 16, D. C.

ILLINOIS

Scholarship Available.—A scholarship of $1,000 for graduate training at the School of Social Service Administration of the University of Chicago is being offered by the National Society for Crippled Children and Adults and Kappa Delta Phi, professional education fraternity. The scholarship will be granted to a qualified student desiring to specialize in the rehabilitation of the crippled. Applicants must hold a bachelor's degree and have completed at least one year of professional education in an accredited school of social work. Those who already have masters' degrees but desire additional training in medical social work are also eligible. Information may be obtained from the National Society for Crippled Children and Adults, 11 S. LaSalle St., Chicago 3.

Psychosomatic Unit Opened.—A 12 bed unit for the study of children with psychosomatic problems has been opened by the University of Illinois at the Illinois Neuropsychiatric Institute, 912 S. Wood St., Chicago. The long-term objective of the program is the study of children with psychosomatic disorders. The research is receiving support from the Field Foundation, which has granted $26,000 for this study, to be expended over the next two years. Drs. Margaret W. Gerard of the department of psychiatry and Julius B. Richmond of the department of pediatrics will direct the studies. In addition to pediatric and psychiatric personnel, the ward will be staffed by the departments and divisions of psychology, nursing, occupational therapy, and medical social work, for the development of an interdisciplinary approach to the study and care of children. The staff of the Institute for Juvenile Research also is cooperating.

Chicago

Society Elections.—At a meeting of the Chicago Neurological Society May 24 Dr. Harold C. Voris was elected president; Dr. Frederick Hiller, vice-president; Dr. Hugh T. Carmichael, councilor; and Dr. Leo A. Kaplan, secretary-treasurer.——At the annual meeting of the Chicago Urological Society April 24 Dr. Jacob S. Grove was elected president; Dr. Andrew McNally, vice-president; and Dr. Joseph H. Kiefer, secretary-treasurer.——Dr. Lowell T. Coggeshall, dean of the University of Chicago division of biological sciences, was recently elected president of the Chicago Society of Internal Medicine. Dr. William E. Adams, professor of surgery, will serve as president of the Chicago Surgical Society, and Dr. Arlington C. Krause, associate professor of ophthalmology, as president of the Chicago Orthoptic Society.

KANSAS

Dr. Perry Honored.—Dr. Middleton L. Perry of Topeka has been honored by the University of Tennessee Medical School, his alma mater, for nearly 60 years of medical service. An award from the university was presented to him at a recent meeting of the Shawnee County (Kansas) Medical Society.

State Medical Election.—At the annual meeting of the Kansas Medical Society in Kansas City, April 27 to May 1, Dr. Warren F. Bernstorf, Winfield, was elected president; Dr. Lucien R. Pyle, Topeka, president-elect; Dr. Murray C. Eddy, Hays, first vice-president; Dr. John M. Porter, Concordia, second vice-president; Dr. Dale D. Vermillion, Goodland, secretary; Dr. John L. Lattimore, Topeka, treasurer; Dr. Laurence S. Nelson, Salina, delegate to the American Medical Association; and Dr. George F. Gsell, Wichita, alternate delegate to the American Medical Association.

MAINE

July Clinics.—The Department of Health and Welfare announces the following clinics for July. Orthopedic clinics will be held in Portland, Maine General Hospital, 9 to 11 a. m. July 14; Lewiston, Central Maine General Hospital, 9 to 11 a. m., July 18; Houlton, Aroostook General Hospital, 9 to 11 a. m., July 8; and Bangor, Eastern Maine General Hospital, 1:30 to 3:00 p. m., July 24. Cardiac clinics will be held in Portland, Maine General Hospital, 9 a. m. to 12 noon, every Friday with the exception of holidays and in Bangor, Eastern Maine General Hospital, 9 to 11 a. m., July 25. Pediatric clinics are scheduled for Bangor, Eastern Maine General Hospital, 1:30 p. m., July 25; Waterville, Thayer Hospital, 1:30 p. m., July 1; and at Presque Isle, Northern Maine Sanatorium, 1:30 p. m., July 23.

The Division of Mental Health offers psychiatric clinic service to children and adults in Portland, Health and Welfare Department, 178 Middle St., every Tuesday; Lewiston, Out-Patient Department, Central Maine General Hospital, every Monday; Augusta, Bureau of Health, Division of Mental Health, by appointment; Waterville, Mansfield Clinic, Thayer Hospital, third Wednesday; Bangor, Out-Patient Department, Eastern Maine General Hospital, first Wednesday afternoon; and Valentine School, Union St., first Thursday. Referrals may be made by private physicians, parents, families, school agencies, school superintendents, Department of Education, and all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health, State House, Augusta. Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

MARYLAND

Fifty Years in Practice.—Dr. Alfred Ullman, chief consultant in surgery at Sinai Hospital since 1946, is celebrating his 50th anniversary in the private practice of surgery. Dr. Ullman, who served as surgeon-in-chief of Sinai Hospital from 1928 to 1945, founded and endowed its research laboratory.

Hospital News.—Dr. Isadore A. Siegel, visiting gynecologist and attending obstetrician at Sinai Hospital, Baltimore, since 1926, assumed his new duties as obstetrician-in-chief on June 1. Dr. Siegel is a founder and secretary-treasurer of the Baltimore RH Laboratory sponsored by the Obstetrical and Gynecological Society of Maryland. He has been health officer of the Maternal Hygiene Division of the Baltimore City Health Department since 1935. He succeeds Dr. Alan F. Guttmacher, who recently resigned to accept the newly created post of full time director of obstetrics and gynecology at Mt. Sinai Hospital in New York.

MINNESOTA

Society Election.—The Minneapolis Pediatric Society has elected Dr. Robert W. Gibbs, president; Dr. Edgar J. Huenekens, honorary president; Dr. Robert D. Semsch, vice-president; Dr. Sidney S. Scherling, secretary; and Dr. Lloyd S. Nelson, treasurer.

Hospital Dedication.—Dedication and open house were held May 25 for the newly completed $750,000 addition to Fairview Hospital, Minneapolis. Known as the Central Core Service Area, this is the first of three phases of a million dollar expansion program planned for completion in early 1953. The new addition houses six operating rooms. The area also includes a chapel, a large dining room and kitchen, laundry, and storage facilities.

Personals.—Dr. Owen H. Wangensteen, professor and chairman of the department of surgery, University of Minnesota Medical School, Minneapolis, gave the annual Ernest E. Irons Nu Sigma Nu Lecture at the University of Chicago on "Observations on Some Surgical Lesions of the Esophagus," May 20.——Dr. Frederick W. Behmler of Morris has been appointed president of the State Board of Health, succeeding Dr. Ruth E. Boynton of Minneapolis. Dr. Behmler, who has been a member of the State Board of Health since 1940, has served as health officer in every town where he has practiced—Lafayette, Appleton, and Morris.

MISSOURI

University News.—Dr. Harry N. Glick, assistant professor of clinical otolaryngology, Washington University School of Medicine, St. Louis, was awarded first prize for his exhibit entitled "The Anatomy and Surgery of the Temporal Bone" at the convention of the Pan-American Congress of Otolaryngology and Bronchoesophagology recently held in Havana, Cuba.——Dr. Jacob G. Probstein, assistant professor of clinical surgery at Washington University School of Medicine, recently discussed pancreatitis before the International College of Surgeons at its meeting in Bordeaux, France, and Madrid, Spain.——Dr. Carl J. Heifetz, assistant in clinical surgery at Washington University School of Medicine, presented a paper on repair of recurrent hernias at the Bordeaux session of the International College of Surgeons.

Cooperative Teaching Program.—The Mutual Security Agency has made a motion picture of Thai trainees studying medicine at Washington University School of Medicine, St. Louis. The movie, to be distributed in Thailand, is concerned with the Washington University-Thailand medical schools teaching assistance program established under the Marshall Plan. The film was taken in Barnes Hospital, Eye Clinic of McMillan Hospital, Washington University Clinics as well as the medical school, and included operations, lectures, and laboratories. Of 10 Washington University faculty members who went to Bangkok, Thailand, in the summer of 1951, 8 are in residence there now, to teach and assist in the operation of the medical schools. In the same period, 23 of the present or future faculty of Thai medical schools have enrolled at Washington University to learn more of their specialty, methods of teaching in American schools, and practice of medicine in this country. Dr. Robert A. Moore, dean of the medical school, recently returned from Thailand. In one of its southern provinces almost everyone has yaws, 60% have chronic malaria, and 35-60% have eye infections. Venereal disease, leprosy, typhoid, and amebic dysentery are common.

NEW YORK

Preceptorships for Fourth Year Students.—Following conferences with the Albany County Chapter of the American Academy of General Practice, Dr. James A. Campbell, dean, and the committee on instruction of the Albany Medical College announce the establishment of elective preceptorships for fourth year medical students beginning July 1.

Society Election.—At the annual meeting of the Central New York Association of Gynecologists and Obstetricians May 20, Dr. Michael J. Elwood, Syracuse, was elected president; Dr. Merton C. Hatch, Syracuse, vice-president; Dr. Vincent J. Hemmer, Syracuse, secretary; and Dr. Roderick A. McLean, Syracuse, treasurer.

Loan Fund for Students.—Chas. Pfizer & Co., Inc., has established a $1,000 loan fund for medical students at the State University College of Medicine at Syracuse. This new program supplements the Pfizer Medical Student Programs for junior and senior medical students and is intended for freshman and sophomore students. Eligibility depends on scholastic merit and need of financial aid.

New York City

Chemotherapy Ward for Cancer Study.—A 42 bed chemotherapy ward has been opened at James Ewing Hospital. Clinical studies in the ward will be made in conjunction with laboratory studies conducted at Sloan-Kettering Institute of the Memorial Center for Cancer and Allied Diseases. All clinical trials in the ward will be conducted on a voluntary basis, with patients selected having far-advanced cases that would not benefit by any other therapy. Studies will include cancers of the blood-forming organs, lungs, colon, and stomach. The work will be under the direction of the chemotherapy service of the Memorial Center. Senior members of the service, in addition to members of the medical and surgical staff of the center, will make up the professional staff, and 10 physicians who will receive chemotherapy fellowships will be assigned to the ward.

Personals.—Dr. Edmund P. Fowler was guest of honor of the American Otological Society at its annual meeting in Toronto. At the banquet he was presented with the scroll and certificate of award of merit and the monetary prize.——Dr. J. Burns Amberson Jr. was recently awarded the Trudeau Medal given annually by the National Tuberculosis Association for "the most meritorious contribution on the cause, prevention or treatment of tuberculosis." Dr. Amberson is spending a month by invitation of the staff at the Brompton Hospital for Diseases of the Chest, London, before attending meetings of the Association of Physicians of Great Britain and Ireland in Sheffield, England, of the British Tuberculosis Association in Cambridge, and the British Thoracic Association in Cardiff, Wales.

TEXAS

Universities Receive Gifts.—The University of Texas Medical Branch, Galveston, has received a large sum from the estate of the late Andrew Cyrus McLaughlin, Los Angeles, for the study of infection and immunity. Mr. McLaughlin was the son of the late Dr. James Wharton McLaughlin, professor of medicine at the university from 1897 to 1905.——Baylor University College of Medicine, Houston, will receive income of about $200,000 a year under terms of the will of the late Mrs. Helene Crosby Simmons. This bequest gives Baylor half interest in oil-producing properties in Texas and Louisiana.——Dr. Herman W. Johnson, president of the Baylor Medical Foundation, has announced the establishment of the Walter H. and Freda Moursund Endowment Fund at Baylor University School of Medicine, Houston. The endowment honors Dr. Walter H. Moursund, dean since 1920.

WEST VIRGINIA

Plans for State Health Center.—West Virginia University has retained architects and consultants for the initial buildings of the state health center to be erected on a 145 acre site less than a mile from the campus at Morgantown. A medical school of the size contemplated calls for a teaching hospital of about 600 beds; it is planned to construct first only a hospital wing of 200 beds. The cost of the basic science building, classrooms, and laboratories for instruction in medicine, dentistry, and nursing is estimated at $4,000,000, and the heating plant and associated equipment at about $1,000,000. The completed hospital, at present prices, may cost $12,000,000.

WISCONSIN

Dr. Eyster Retires.—Dr. John A. E. Eyster, chairman of the department of physiology of the University of Wisconsin Medical School, Madison, has retired after 41 years' affiliation with the department. His current research has to do with electric characteristics of injuries to heart muscle. He expects to continue his investigations and to do much of his work in the university laboratory.

Academy of Medicine Essay Contests.—The Milwaukee Academy of Medicine is again sponsoring two essay contests. In the Horace Manchester Brown Memorial contest, the academy offers prizes of $100 and $50 for the two best scientific essays in any field of medicine, surgery, or the allied specialties. The essays should represent individual work and must not have been previously published. The contest is open to all physicians who have been graduated from medical school within the past 10 years and who are residing in the State of Wisconsin or who are in the armed forces.

Prizes of $200 and $100 will be offered in the Rogers Memorial Prize Essay contest for the two most meritorious studies in the fields of neurology, psychiatry, and psychosomatic medicine. The contest is open to all members of the medical profession who are citizens of Wisconsin.

In both contests, all papers must be submitted in triplicate, double spaced. They should be sent to the office of the Milwaukee Academy of Medicine, 561 N. Fifteenth St., Milwaukee 3, not later than Dec. 1. The committee reserves the right to withhold the awarding of prizes if in its judgment no papers worthy of award have been submitted.

GENERAL

Scandinavian Fellowships.—Ten fellowships for graduate study in Denmark, Norway, and Sweden are being offered for 1952-1953 by the American Scandinavian Foundation, 127 E. 73 St., New York 21. Interested students should apply to the foundation as soon as possible.

Psychiatric Papers.—The Southern Psychiatric Association, which will hold its next meeting in White Sulphur Springs, W. Va., Nov. 2-5, invites fellows of the association who wish to offer papers to communicate with Dr. Newdigate M. Owensby, secretary of the association, 384 Peachtree St., N. E., Atlanta 3, at the earliest possible date.

Gastroenterological Award.—The National Gastroenterological Association has announced a prize award contest for the best unpublished contribution on gastroenterology or allied subjects. The award will be $100 with a certificate of merit. Papers should be limited to 5,000 words, typewritten, and submitted with an entry letter in quintuplicate, to be received not later than Sept. 21. All entries should be addressed to the National Gastroenterological Association, 1819 Broadway, New York 23.

Orthopedic Appliance Research.—The president of the Mellon Institute in Pittsburgh announces that the Multiple Fellowship on Orthopedic Appliances, sustained there by grants from the Sarah Mellon Scaife Foundation, will begin its sixth year on a broadened research and development program. Heretofore attention has been directed largely at the design and manufacturing problems of leg, arm, and back braces. Recently study of other kinds of mechanical aids for crippled and handicapped persons and of improvements in the instrument armamentarium of the orthopedic surgeon has been added to the program. For effective guidance of the fellowship's investigational and developmental projects, a medical advisory committee has been set up.

Industrial Survey on Chronic Illness.—A nation-wide survey studying the effect of prolonged illness on employed persons in the United States has been launched by the Research Council for Economic Security, 111 West Jackson Boulevard, Chicago. Firms representing 20 industries are currently reporting the illness experience of more than 100,000 workers. The survey will gradually be expanded to cover at least 500,000 employed persons in every region throughout the country. It is estimated that the survey will require two years to complete.

Pan-American Medical Women's Alliance.—Dr. Jessie Laird Brodie, Portland, was chosen president-elect of the Pan-American Medical Women's Alliance at its recent meeting in Montevideo, Uruguay. Dr. Margarita Delgado de Solis Quiroga of Mexico City is president for the 1952-1953 biennium, and Dr. Brodie will assist her in arranging the 1953 congress, which is to be held in the United States. The alliance was founded to encourage the interchange of medical knowledge among women physicians of the Western Hemisphere. Its special interests are medical problems relating to women and children. The first Congress of the Alliance was held in Mexico City with delegates from Mexico, Cuba, Ecuador, Salvador and the United States. Today, there are members also from Brazil, Uruguay, Argentina, Paraguay, Chile, Peru, Trinidad, and Panama.

Conference on Closures of Containers.—The increasing therapeutic importance of official drugs used by parenteral administration has emphasized the need for containers of the highest quality. To meet this need the U. S. Pharmacopeia and the National Formulary 10 years ago set up common, standard specifications for the glass of containers for the official preparations. No comparable standards have been created, however, for the closures of such containers.

For the purpose of drafting appropriate official specifications for closures an open conference is scheduled for 10 a. m., June 25, at the Pharmacopeia Building, New York, to which all interested parties are invited. George D. Beal, Ph.D., research director of Mellon Institute and chairman of the U. S. P. Subcommittee on Cyclic Compounds, will act as chairman of the conference.

Cancer Conference.—The annual Rocky Mountain Cancer Conference will be held at the Shirley-Savoy Hotel in Denver July 9-10 under the presidency of Dr. N. Paul Isbell, Denver. It will be sponsored by the Colorado State Medical Society and the Colorado Division of the American Cancer Society. On Wednesday at 10 a. m. there will be a symposium on postmenopausal bleeding, in which Drs. Lauren V. Ackermann, St. Louis, Simeon T. Cantril, Seattle, and C. Langdon Parsons, Boston, will collaborate. At 12:15 p. m. there will be a roundtable luncheon, with Dr. Juan A. del Regato of Colorado Springs presiding.

Guest speakers for the conference will include: Drs. Lauren V. Ackermann, St. Louis; Lyon H. Appleby, Vancouver, B. C.; Simeon T. Cantril, Seattle; Edward P. Cawley, Charlottesville, Va.; Harold W. Dargeon, New York; George R. Meneely, Nashville, Tenn.; C. Langdon Parsons, Boston; and Cornelius P. Rhoads, New York.

Society Elections.—At the annual meeting of the American Association of Immunologists in New York, April 14, John F. Enders, Ph.D., Boston, was elected president; Dr. Thomas P. Magill, Brooklyn, vice-president; John Y. Sugg, Ph.D., New York, secretary-treasurer; and Merrill W. Chase, Ph.D., New York, councilor.——At the annual meeting of the American Gastroenterological Association, held in Atlantic City May 2-3, Dr. Albert M. Snell, Palo Alto, Calif., was elected president; Dr. Julian M. Ruffin, Durham, N. C., first vice-president; Dr. Dwight L. Wilbur, San Francisco, second vice-president; and Dr. H. Marvin Pollard, Ann Arbor, Mich., secretary.——At the annual meeting of the American Otological Society, Inc., in

Toronto, Canada, May 18-19, Dr. Albert C. Furstenberg, Ann Arbor, was elected president; Dr. Frederick T. Hill, Waterville, Maine, vice-president; Dr. John R. Lindsay, Chicago, secretary-treasurer; and Dr. Henry L. Williams, Rochester, Minn., editor-librarian.——At the annual meeting of the American Academy of Tuberculosis Physicians in Chicago, June 7, Dr. Robert G. McCorkle, San Antonio, Texas, was elected president; Dr. Ethan Allan Brown, Boston, first vice-president; Dr. Zoltan Galambos, Chicago, second vice-president; and Dr. Oscar S. Levin, Denver, secretary.——At a recent meeting in Cincinnati, Dr. Frederick H. Falls of Chicago was elected president of the American Committee on Maternal Welfare succeeding Dr. Fred L. Adair of Maitland, Fla., who had been president since the committee was incorporated in 1934. Dr. Bayard Carter of Durham, N. C., was reelected vice-president, Miss Ann Kirchner, R.N., of Chicago was chosen secretary, and Dr. Francis Ford, Rochester, N. Y., treasurer.

FOREIGN

Orthopedic Meeting.—The joint meeting of the Orthopaedic Associations of the English-Speaking World will be held in London, England, June 28 to July 12. Thirty-six papers will be presented. On Tuesday at 5 p. m. Sir Charles Max Page of London will deliver the Robert Jones Lecture on "Impact of War in Surgical Practice," and on Thursday afternoon at 5, Dr. Leo Mayer of New York will deliver the Moynihan Lecture on "Development of Tendon Surgery."

Presidents of the American, British, Canadian, Australian, South African, and New Zealand orthopedic associations will preside at the various sessions. An elaborate social program has been planned.

Congress of Dermatology.—The tenth International Congress of Dermatology will be held in London, England, July 21-26 under the presidency of Sir Archibald Gray. On Monday there will be a symposium on "The Pathogenesis of Eczema," on Tuesday, "ACTH and Cortisone: Effects on the Skin and Skin Diseases," and on Wednesday, "The Treatment of Tuberculosis of the Skin and Allied Conditions." Clinical cases will be demonstrated on Wednesday and Thursday afternoons at the Queen Alexandra Military Hospital, Millbank, London, S. W. 1. The Medical Exhibition will be open at Bedford College throughout the week, the exhibits consisting of moulages, pathological specimens, photographs, and books and objects of historical interest. Correspondence should be directed to Dr. Gordon B. Mitchell-Heggs, Secretary-General, Institute of Dermatology, University of London, St. John's Hospital for Diseases of the Skin, Lisle Street, Leicester Square, London, W. C. 2.

Medical Women's Council to Meet in France.—The council meeting of the Medical Women's International Association will be held in Vichy, France, Sept. 12-16. Papers to be presented include:

Ovarian Tumors, Dr. Gauthier-Villars.
Liver Insufficiency, Dr. Chevrel.
Biopsy in Liver Disease, Dr. Lamotte-Barillon.
Treatment of Cancer of the Cervix, Dr. Laborde.

There will be further reports on medical aspects of housework assembled from questionnaires sent to housewives in many countries. Reservations for the International Tour planned in connection with the council meeting may be made through the Business Manager, Room 210, 2 Lexington Ave., New York 10.

CORRECTION

Motion Picture—Anorectal Divulsion Versus Pectenotomy.—In the section on Medical Motion Pictures in The Journal, May 24, 1952, page 395, the word "craniotomy" in the 10th line from the bottom of the first review should have been "cryptotomy."

Congenital Methemoglobinemia. — Dr. Benjamin M. Gasul, senior author of the article by this title, in The Journal, May 17, 1952, requests the following correction beginning in line 21 on page 259: instead of "An arterial blood sample was examined by Dr. James Campbell of the Presbyterian Hospital, and . . .," this should read "A venous blood sample was examined. . . ."

MEETINGS

American Hearing Society, Chicago, June 28. Mrs. Francis E. Lee, 817 14th St. N.W., Washington 5, D. C., Secretary.

American Orthopedic Association, London, England, June 30-July 4. Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

American Urological Association, Chalfonte-Haddon Hall, Atlantic City, N. J., June 23-26. Dr. Charles H. deT. Shivers, Boardwalk National Arcade Bldg., Atlantic City, N. J., Secretary.

American Veterinary Medical Association, Ambassador Hotel, Atlantic City, N. J., June 23-26. Dr. J. C. Hardenbergh, 600 South Michigan Ave., Chicago 5, Executive Secretary.

Maine Medical Association, Samoset Hotel, Rockland, June 22-24. Mr. W. Mayo Payson, 142 High Street, Portland 3, Executive Secretary.

Medical Library Association, Lake Placid Club, Lake Placid, N. Y., June 24-27. Miss Caroline Riechers, 1758 West Harrison St., Chicago 12, Secretary.

National Medical Association, Chicago, Aug. 11-15. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

Post Graduate Medical Assembly of South Texas, Shamrock Hotel, Houston, July 21-23. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secretary.

Rocky Mountain Radiological Society, Denver, Aug. 7-9. Dr. Maurice D. Frazer, 1037 Stuart Bldg., Lincoln, Neb., Secretary.

Upper Peninsula Medical Society, Country Club, Iron Mountain, Mich., June 27-28. Dr. E. Theodore Palm, 412 Superior Ave., Crystal Falls, Mich., Secretary.

West Virginia State Medical Association, The Greenbrier, White Sulphur Springs, July 24-26. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

INTERNATIONAL

Australasian Medical Congress, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, General Secretary.

Commonwealth and Empire Health and Tuberculosis Conference, Central Hall, London, England, July 8-13. Dr. J. H. Harley Williams, Tavistock House North, Tavistock Sq., London, W.C.1, England, Secretary General.

Congress of the International Diabetes Federation, Leyden, Netherlands, July 7-12. Dr. F. Gerritzen, 33, Prinsegracht, The Hague, Netherlands, Secretary.

European Congress of Cardiology. University of London, Bloomsbury, W.C.1, England, Sept. 10-12. Dr. K. Shirley Smith, 35 Wimpole St., London, W.1, England, Secretary.

European Society of Cardiovascular Surgery, Strasbourg, France, Oct. 3-4. Sir James Learmonth, Department of Surgery, University New Buildings, Edinburgh 8, Scotland.

Interamerican Cardiological Congress, Buenos Aires, Argentina, Aug. 31-Sept. 7. Dr. Blas Moia, Larrea 1132, Buenos Aires, Argentina, Secretary-General.

Inter-American Congress of Public Health, Havana, Cuba, Sept. 27-Oct. 1. Pan-American Sanitary Bureau, 2001 Connecticut Ave., Washington, D. C.

Inter-American Congress of Radiology, Mexico City, Mexico, Nov. 2-8. Dr. Guido Torres Martinez, Marsella No. 11, Mexico, D.F., Secretary-General.

International Congress of Biochemistry, Paris, France, July 21-27. Prof. Jean Courtois, 4, Avenue de l'Observatoire, Paris 6^e, France, Secretary.

International Congress of Dermatology and Syphilology, London, England, July 21-26. Dr. Gordon B. Mitchell-Heggs, 5, Lisle St., London, W.C.2, England, General Secretary.

International Congress of Dietetics, Royal Tropical Institute, Amsterdam, The Netherlands, July 7-11. Miss Diane J. Ten Haaf, Educational Bureau of the Nutritional Council, 42 Koninginnegracht, The Hague, Netherlands, General Secretary.

International Congress on Diseases of the Chest, Rio de Janeiro, Brazil, Aug. 24-30. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

International Congress of Haematology, Mar del Plata, Argentina, Sept. 21-26. Dr. Carlos Reussi, Anchorena 1710, Buenos Aires, Argentina, Secretary.

International Congress of the History of Medicine, Nice-Cannes, France, and Monaco, Sept. 8-18. Dr. F. A. Sondervorst, 124 Avenue des Allies, Louvain, Belgium, Secretary-General.

International Congress on Hydatid Disease, Santiago, Chile, Nov. 21-24. Organizing Committee, P. O. Box 9183, Santiago, Chile.

International Congress of Internal Medicine, Friends House, London, N.W.1, Eng. Sept. 15-18. Sir Harold Boldero, 12 Pall Mall East, London, S.W.1, England, Secretary.

International Congress on Medical Records, London, England, Sept. 7-12. Miss Gwen Perkins, 120 C Street S.E., Washington, D. C., Chairman.

International Congress of Military Medicine and Pharmacy, Montevideo, Uruguay, March 1-6. Dirreccion General del Servico de Sanitad Militar, 8 de Octubre y Mariano Moreno, Montevideo, Uruguay, Secretariat of the Congress.

International Congress on Neuropathology, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

International Congress of Physical Medicine, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

International Congress of Physiopathology of Animal Reproduction and Artificial Insemination, Copenhagen, Denmark, July 7-10. Prof. Ed. Sorensen, The Royal Veterinary and Agricultural College, Bülowsvej 13, Copenhagen V, Denmark.

International Congress of Urology, The Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 15-18. Dr. John A. Taylor, 2 East 54th St., New York, N. Y., U. S. A., Secretary-General.

International Neurological Reunion, Paris, France, July 8-9. M. Jean Sigwald, 68 Boulevard de Courcelles, Paris 17e, France.

International Society of Geographic Pathology, Liège, Belgium, July 15-18. Dr. Fred C. Roulet, Habelstr. 24, Basel, Switzerland, Secretary General.

International Union Against Tuberculosis, Rio de Janeiro, Brazil, Aug. 24-27. Prof. Etienne Bernard, 66 Blvd. St. Michel, Paris 6e, France, Secretary-General.

Neuroradiologic Symposium, Stockholm, Sweden, Sept. 17-20. Docent Ake Lindbom, Symposium Neuroradiologicum, Serafimerlasarettet, Stockholm K., Sweden, Secretary.

World Federation of Mental Health, Brussels, Belgium, Aug. 25-Sept. 1.

World Medical Association, Athens, Greece, Oct. 12-16. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary General

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 24-26, 1952. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery 4.

Alaska:* *Examination.* Juneau. On application in other towns where there are board members. *Reciprocity.* On application. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Arizona:* *Examination.* Phoenix, July 15-17. *Reciprocity.* July 19. Sec., Dr. J. H. Patterson, 316 W. McDowell St., Phoenix.

Arkansas:* *Examination. Regular.* Little Rock, June 19-20. Sec., Dr. Joe Verser, Harrisburg. *Homeopathic.* Little Rock, June 10-11. Sec., Dr. Carl S. Bungart, 105 N. 14th St., Fort Smith. *Eclectic.* Little Rock, June 5-6. Sec., Dr. Frank C. Smith, 2301 Broadway, Little Rock.

California: *Written.* San Francisco, June 23-26; Los Angeles, Aug. 18-21; Sacramento, Oct. 20-23. Application must be received at least two weeks prior to date of examination. *Oral for Reciprocity Applicants.* San Francisco, June 21; Los Angeles, Aug. 16; San Francisco, Nov. 8. Applicants are requested not to arrange to come to an oral examination until they receive notice from the Credentials Committee. *Oral and Clinical for Foreign Medical School Graduates.* San Francisco, June 22; Los Angeles, Aug. 17; San Francisco, Nov. 9. Sec., Dr. Frederick N. Scatena, 1020 N St., *Sacramento.*

Colorado:* *Examination.* Denver, June 10-12. Final date for filing application was May 12. *Reciprocity.* Denver, July 8. Applications accepted through June 9. Sec., Dr. Samuel H. Brown, 831 Republic Bldg., Denver.

Connecticut:* *Regular. Examination.* Hartford, July 8-9. Sec. to the Board, Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, July 8-9. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: Dover, *July 8-10. Sec., Dr. Joseph S. McDaniel, 229 South* State St., Dover.

Florida:* *Examination.* Jacksonville, June 29-July 1. Sec., Dr. Homer L. Pearson, 701 Dupont Bldg., Miami.

Georgia: Atlanta, June 10-11. Sec., Mr. R. C. Coleman, 111 State Capitol, *Atlanta 3.*

Guam: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Ex. Sec., Dr. Austin W. Matthis, Agana.

Hawaii: *Examination.* Honolulu, July 14-17. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

Idaho: Boise, July 14-16. Sec., Mr. Armand L. Bird, 305 Sun Bldg., Boise.

Illinois: *Examination.* Chicago, June 24-26 and Oct. 7-9. Supt. of Regis., Mr. Charles F. Kervin, Capitol Bldg., Springfield.

Indiana: Indianapolis, June 1952. Sec., Dr. Paul R. Tindall, 538 K of P Bldg., Indianapolis 4.

Iowa:* *Examination.* Iowa City, June 9-11. Acting Sec., Dr. Walter L. Bierring, 1027 Des Moines St., Des Moines

Maine: Augusta, July 8-9. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: *Examination.* Baltimore, June 17-20. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 17-18. Sec., Dr. John A. Evans, 6029 Bellona Ave., Baltimore.

Massachusetts: Boston, July 8-11. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston.

Michigan:* *Examination.* Ann Arbor and Detroit, June 9-11. Sec., Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

Minnesota:* Minneapolis, June 17-19. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Examination.* Jackson, June 23-24. *Reciprocity.* Jackson, June 25. Asst. Sec., Dr. R. N. Whitfield, Old Capitol, Jackson.

Missouri: *Examination.* St. Louis, June 13-14. Ex. Sec., Mr. John A. Hailey, Box 4, State Capitol Bldg., Jefferson City.

Montana: Helena, Oct. 6-8. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

Nebraska: *Examination.* Omaha, June 16-18. Director, Mr. Husted K. Watson, Bureau of Examining Boards, Room 1009, State Capitol, Lincoln.

Nevada:* Carson City, Aug. 4. Sec., Dr. George H. Ross, 112 Curry St., Carson City.

New Hampshire: Concord, Sept. 10. Sec., Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: *Examination.* Trenton, June 17-20. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New York: Albany, Buffalo, New York and Syracuse, June 24-27. Sec., Dr. Stiles D. Ezell, 23 S. Pearl St., Albany.

North Carolina: *Written.* Raleigh, June 16-19; *Reciprocity.* Raleigh, June 17. Sec., Dr. Joseph J. Combs, 419 Professional Bldg., Raleigh.

North Dakota: *Examination.* Grand Forks, July 9-11. *Reciprocity.* Grand Forks, July 12. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, June 17-20. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus 15.

Oregon:* *Examination.* Portland, July 7-9. *Reciprocity.* Portland, July 25-26. Final date for filing application is June 16. Exec. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia and Pittsburgh, July 8-10. Acting Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

Rhode Island: *Examination.* Providence, July 2-3. Administrator of Professional Regulations, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Carolina: Examination. Columbia, June 23-24. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota:* Rapid City, July 15. Sec., Dr. C. B. McVay, Yankton Clinic, Yankton.

Tennessee:* *Examination.* Memphis and Nashville, June 11-12. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis.

Texas: Fort Worth, June 19-21. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth.

Utah: *Examination.* Salt Lake City, July 9-11. *Reciprocity.* Salt Lake City, June 20. Asst. Dir., Mr. Frank E. Lees, 314 State Capitol Bldg., Salt Lake City 1.

Vermont: *Examination.* Burlington, June 16-18. Sec., Dr. F. J. Lawliss, Richford.

Virginia: *Examination.* Richmond, June 12-14. *Reciprocity.* Richmond, June 11. *Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.*

Washington:* Seattle, July 14-16. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

West Virginia: Charleston, July 7-9. Sec., Dr. N. H. Dyer, State Office Bldg., No. 3, Charleston 5.

Wisconsin:* Milwaukee, July 8-10. Sec., Dr. A. G. Koehler, 46 Washington Blvd., Oshkosh.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: *Examination.* On application. Juneau or other towns *in Territory* as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

Arizona: *Examination.* Tucson, June 17. Sec., Mr. H. D. Rhodes, University of Arizona, Tucson.

Colorado: *Examination.* Denver, *Sept. 10-11. Sec.,* Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

Connecticut: *Examination.* New Haven, June 14. Address: State Board of Healing Arts, 110 Whitney Ave., New Haven 10.

District of Columbia: *Examination.* Washington, Oct. 20-21. Sec., Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

Iowa: *Examination.* Des Moines, July 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Detroit and Ann Arbor, Oct. 10-11. Sec., Mrs. Anne Baker, 423 W. Michigan Ave., Lansing.

Nebraska: *Examination.* Omaha, Oct. 7-8. Director, Bureau of Examining Boards, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

Nevada: *Examination.* Reno, July 8. *Reciprocity.* On application. Sec., Mr. Frank Richardson, University of Nevada, Reno.

Oregon: *Examination.* Portland, Sept. 6 and Dec. 6. Sec., Dr. Charles D. Byrne, State Board of Higher Education, University of Oregon, Eugene.

Rhode Island: *Examination.* Providence, Aug. 13. Administrator of Professional Regulations, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: Vermillion, June 13-14. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Tennessee: *Examination.* Memphis, July 2-3. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

Texas: *Examination.* Austin, October. Sec., Brother Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

Washington: *Examination.* Seattle, July 9-10. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: *Examination.* Milwaukee, Sept. 13. Sec., Mr. W. H. Barber, Ripon College, Ripon.

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* Basic Science Certificate required.

DEATHS

Guggenheim, Louis Kaufman ⊕ Los Angeles; born in Cincinnati, March 3, 1884; Washington University School of Medicine, St. Louis, 1905; associate clinical professor of surgery (otology, rhinology, and laryngology), University of Southern California School of Medicine; formerly assistant professor of otolaryngology, Washington University School of Medicine, in St. Louis, and research associate at the University of California Medical Department; an Associate Fellow of the American Medical Association; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology, American Laryngological, Rhinological and Otological Society, and the American Otological Society; fellow of the American College of Surgeons; formerly staff consultant of St. John's Hospital in Santa Monica, staff member of the Los Angeles County General Hospital, Eye and Ear Hospital, and the Childrens Hospital; author of "Otosclerosis," "Phylogenesis of the Ear," and "The Embryology of the Human Ear," which is currently being edited for posthumous publication; died March 13, aged 68, of dissecting aneurysm of the thoracic aorta.

Mackenzie, George Miner, Cooperstown, N. Y.; born in Lawrenceville, N. J., in 1885; Columbia University College of Physicians and Surgeons, New York, 1913; past president of the New York State Association of Public Health Laboratories; formerly associate professor of medicine at Albany (N. Y.) Medical College and at his alma mater; specialist certified by the American Board of Internal Medicine; member of the Association of American Physicians, American Society for Clinical Investigation, American Clinical and Climatological Association, American Association of Pathologists and Bacteriologists, and the Society of American Bacteriologists; fellow of the American College of Physicians; served during World War I; formerly an associate for the division of laboratories and research, New York State Department of Health, and special consultant, division of research grants, National Institutes of Health, U. S. Public Health Service; retired director, Mary Imogene Bassett Hospital, where he had been physician in chief; died in Charlottesville, Va., March 25, aged 66, of aneurysm of the aorta.

Sevier, Charles Edwin ⊕ Colorado Springs, Colo.; born in Brownsville, Tenn., May 23, 1889; Johns Hopkins University School of Medicine, Baltimore, 1916; specialist certified by the American Board of Orthopaedic Surgery; senior member of the American Orthopaedic Association and emeritus member of the American Academy of Orthopaedic Surgeons; formerly associate professor of surgery (orthopedics) at University of Colorado School of Medicine in Denver; served during World War I; consultant in orthopedic surgery at Union Printers Home and Tuberculosis Sanatorium in Colorado Springs, and the National Jewish Hospital in Denver; attending orthopedic surgeon at Children's Hospital, Presbyterian Hospital, St. Joseph's Hospital, St. Luke's Hospital, and Mercy Hospital in Denver, where he died March 8, aged 62, following prostatic resection.

Barron, Elmer Walter ⊕ North Hanover, Mass.; born in Boston Jan. 6, 1877; Harvard Medical School, Boston, 1903; since 1911 a member of the faculty of Tufts College Medical School, where in 1929 he became professor of pediatrics and in 1942 professor of pediatrics, emeritus; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics and the New England Pediatric Society, of which he had been president; served as head of the department of pediatrics in the New England Medical Center with concurrent appointments as physician in chief of the Boston Floating Hospital and chief of the Children's Clinic of the Boston Dispensary; for many years chief of the pediatric service of the Malden (Mass.) Hospital; died in the New England Deaconess Hospital in Boston Jan. 20, aged 75, of carcinoma.

Stine, George Haeberle ⊕ Colorado Springs, Colo.; born in Niagara Falls, N. Y., Sept. 13, 1897; University of Buffalo School of Medicine, 1923; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology, Association for Research in Ophthalmology, and the International College of Surgeons; past president of the Colorado State Ophthalmological Society; served during World War I; consultant for diseases of the eye to the Myron Stratton Home, the Colorado State School for the Deaf and Blind, and the Missouri Pacific Railroad; affiliated with St. Francis Hospital, Memorial Hospital, and Glockner-Penrose Hospital, where he died April 9, aged 54, of dissecting aortic aneurysm.

Knox, James Hall Mason Jr. ⊕ Baltimore; born in 1872; Johns Hopkins University School of Medicine, Baltimore, 1898; an Associate Fellow of the American Medical Association; specialist certified by the American Board of Pediatrics; member of the American Pediatric Society, of which he had been president in 1925, American Academy of Pediatrics, and the American Public Health Association; associate emeritus in pediatrics at his alma mater; served as consultant for the Bureau of Child Hygiene, State Department of Health; affiliated with Johns Hopkins and Union Memorial hospitals; died recently, aged 79, of cerebral thrombosis and arteriosclerosis.

Pritchard, John Albert, Ogdensburg, N. Y.; born in Brockville, Ontario, Canada, in 1879; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1903; member of the American Psychiatric Association and the American Medical Association; served with the New York State Department of Mental Hygiene from 1903 until his retirement two years ago; at one time superintendent of the Buffalo State Hospital; for many years senior director of St. Lawrence State Hospital; died in the Pritchard Pavilion, a building named in his honor at the hospital, March 9, aged 72, of chronic myocardial degeneration and pulmonary fibrosis.

Polowe, David ⊕ Paterson, N. J.; born in New York Feb. 3, 1893; University of Louisville (Ky.) School of Medicine, 1926; certified by the National Board of Medical Examiners; fellow of the American College of Surgeons; during World War I chief mate on armed merchant ships, and received a letter of commendation from the then Secretary of the Navy; author of "Navigation for Mariners and Aviators"; wrote articles on medical, scientific, and maritime subjects, and many poems; affiliated with Nathan and Miriam Barnert Memorial Hospital, where he died April 3, aged 59, of heart disease.

Amsberry, Albert Lincoln, Carthage, S. D.; State University of Iowa College of Medicine, Iowa City, 1893; died in St. Joseph's Hospital, Mitchell, Feb. 18, aged 85, of coronary thrombosis.

Berry, William Thompson ⊕ Birmingham, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1899; an Associate Fellow of the American Medical Association; died in Mountain Brook, recently, aged 75, of coronary thrombosis.

Blair, Fred Leroy, Fonda, Iowa; State University of Iowa College of Medicine, Iowa City, 1905; died Feb. 26, aged 72, of coronary occlusion and diabetes mellitus.

Church, Gerald Thompson, Syracuse, N. Y.; Syracuse University College of Medicine, 1927; associate professor of surgery at his alma mater; member of the American Medical Association; fellow of the American College of Surgeons; at one time a fellow in surgery at the Mayo Foundation in Rochester, Minn.; served during World War II; a member of the staffs of the Syracuse University Hospital of the Good Shepherd, St. Joseph's Hospital, and the Syracuse Free Dispensary; died recently, aged 49, of coronary thrombosis.

Cook, William Casper, Wilkinsburg, Pa.; Chicago Homeopathic Medical College, 1890; died recently, aged 84, of arteriosclerotic heart disease.

⊕ Indicates Fellow of the American Medical Association.

Davis, Norman Robert ⊕ Grantsville, Md.; Maryland Medical College, Baltimore, 1913; past president of the Allegany Garrett Counties Medical Society; served during World War I; president of First State Bank of Grantsville for many years; examiner for the Equitable Life Insurance Company of Iowa; died Feb. 11, aged 63, of carcinoma of the pancreas.

Flynn, John Francis, Erie, Pa.; Georgetown University School of Medicine, Washington, D. C., 1943; certified by the National Board of Medical Examiners; served on the staff of the Corning Hospital in Corning; died recently, aged 33, of heart failure and acute pulmonary edema.

Galbreath, Jesse W., Urich, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1892; died in Clinton Feb. 13, aged 84, of coronary occlusion.

Galvin, Robert John ⊕ Oelwein, Iowa; St. Louis University School of Medicine, 1924; served during World War I; on the staff of the Mercy Hospital; died Feb. 15, aged 53, of coronary occlusion.

Haskell, A. Dair ⊕ Alexandria, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1900; served as mayor; affiliated with St. Luke's Hospital; died recently, aged 74, of pneumonia, following influenza and Parkinson's disease.

Haywood, George William, Lynn, Mass.; Boston University School of Medicine, 1890; formerly president of the city council; for many years on the staff of the Union Hospital; died March 18, aged 83, of cerebral hemorrhage.

Jarvis, Fred Jackson ⊕ Oskaloosa, Iowa; State University of Iowa College of Medicine, Iowa City, 1901; died in Mercy Hospital, Iowa City, recently, aged 77, of cerebral hemorrhage.

Kackley, Owen Roy, Galion, Ohio; Starling-Ohio Medical College, Columbus, 1914; past president and secretary-treasurer of the Crawford County Medical Society; county coroner and city health commissioner; served during World War I; affiliated with Galion City Hospital, where he had been chief of staff and where he died Jan. 26, aged 63, of coronary thrombosis.

Martin, Ernest R., Newport News, Va.; Medical College of Virginia, Richmond, 1899; member of the American Medical Association; died recently, aged 74, of congestive heart disease.

Meredith, Guy Irving ⊕ Joplin, Mo.; Jefferson Medical College of Philadelphia, 1923; died Feb. 18, aged 56.

Moon, Arthur Ernest Jr., Temple, Texas; Southwestern Medical School, Dallas, 1947; member of the American Medical Association; affiliated with Scott and White Clinic, and the Gulf, Colorado, and Santa Fe Hospital; died recently, aged 28, of injuries received in an automobile accident.

Morrill, Gordon Niles, Rancho Santa Fe, Calif.; Harvard Medical School, Boston, 1905; served with the U. S. Public Health Service; fellow of the American College of Surgeons; died in La Jolla Feb. 13, aged 73.

Mottek, Felix ⊕ Cleveland; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1917; served during World War I; died Feb. 22, aged 62.

Piper, Lawrence Philip, Chicago; Northwestern University Medical School, Chicago, 1906; served during World War I; died in Veterans Administration Hospital in Hines, Ill., April 18, aged 68, of bronchogenic carcinoma.

Schaefer, Arthur Albert ⊕ Milwaukee; Harvard Medical School, Boston, 1928; associate clinical professor of surgery at Marquette University School of Medicine; specialist certified by the American Board of Surgery; member of the Western Surgical Association; fellow of the American College of Surgeons; affiliated with Columbia and Milwaukee Children's hospitals; died March 5, aged 49, of coronary sclerosis.

Scherer, Otto, Detroit; Detroit College of Medicine, 1890; died March 24, aged 86.

Schmidt, Rudolph Englebert, Portland, Ore.; Williamette University Medical Department, Salem, 1905; died Feb. 16, aged 68.

Snow, Henry Oscar, Tampa, Fla.; Atlanta College of Physicians and Surgeons, 1900; member of the American Medical Association; died Feb. 18, aged 75, of cardiorenal disease.

Steck, Otto Edward, Bellville, Texas; University of Louisville (Ky.) Medical Department, 1900; president of Austin County Medical Society in 1937 and secretary of Austin-Waller Counties Medical Society from 1938 to 1942; for many years local physician for the Santa Fe Railroad, county health officer, and city health officer; died recently, aged 75, of arteriosclerosis.

Thompson, Hubert Orion, Tyler, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1926; died March 7, aged 53, of coronary infarction.

Thomson, William Ross ⊕ Miami Beach, Fla.; University of Virginia Department of Medicine, Charlottesville, 1896; fellow of the American College of Surgeons; served as vice-president of the Medical Society of the State of New York; a founder of the Wyoming County Community Hospital in Warsaw, N. Y.; on the staffs of St. Francis and Mount Sinai hospitals; died in Leroy Sanitarium, New York, March 18, aged 80, of uremia and hypostatic pneumonia.

Thornton, Andrew Joseph, San Diego, Calif.; Vanderbilt University School of Medicine, Nashville, Tenn., 1910; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; past president and secretary of the San Diego County Medical Society; served during World War I; on the staffs of Mercy and San Diego County General hospitals; died March 3, aged 70, of cerebral thrombosis, polycythemia vera, arteriosclerosis, and Paget's disease.

Trutna, Thomas John ⊕ Silver Lake, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1905; served during World War I; died Feb. 8, aged 72, of carcinoma of the prostate.

Turck, Alois Edward, St. Louis; St. Louis University School of Medicine, 1911; served during World War I; died in Barnes Hospital March 25, aged 65, of dissecting aneurysm of the aorta.

Ulrey, John Calvin ⊕ St. John, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1906; served as county health officer; died in Orlando, Fla., Feb. 24, aged 74, of myocardial infarction and coronary sclerosis.

Upham, Helen Frances ⊕ Asbury Park, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1903; member of the American Academy of Ophthalmology and Otolaryngology; died Feb. 3, aged 74, of arteriosclerotic cardiovascular disease.

Van Becelaere, Joseph, San Diego, Calif.; Université de Lille Faculté de Médecine et de Pharmacie, France, 1887; died March 29, aged 86.

Vermillion, Earl Leroy ⊕ Salina, Kan.; University of Kansas School of Medicine, Kansas City, Kan., 1917; past president of the Salina County Medical Society; served during World War I; died in St. John's Hospital April 7, aged 56, of coronary thrombosis.

Vincent, John Allen, Lakewood, Ohio; Western Reserve University Medical Department, Cleveland, 1903; died Feb. 24, aged 75, of pneumonia.

Wallace, Edward R., Aurora, Ind.; Pulte Medical College, Homeopathic, Cincinnati, 1906; died March 7, aged 75, of cerebral hemorrhage and hypertension.

Wallace, John Elbert Howard, Wyoming, Ohio; Meharry Medical College, Nashville, Tenn., 1918; died Feb. 20, aged 56.

Webb, Harvey Doyle ⊕ Bristol, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1918; president of the board of health of Bristol; served during World War I; president of the First Federal Savings & Loan Association of Bucks County; died April 2, aged 62, of coronary thrombosis.

Wood, Merritt, Tekamah, Neb.; Barnes Medical College, St. Louis, 1903; member of the American Medical Association; died in Veterans Administration Hospital, Omaha, recently, aged 74, of acute leukemia.

Worth, Winfield Augustus Jr., Elizabeth City, N. J.; Washington University School of Medicine, St. Louis, 1947; member of the American Medical Association; died recently, aged 28, of melanosarcoma.

GOVERNMENT SERVICES

ARMY

Medical Meeting in Korea.—At the May medical meeting of the X Corps Medical and Dental Society in Korea, Capt. Shirley Gage of Delanson, N. Y., discussed her medical experience in a hospital in China during the Communists' rise to power in that country. Dr. Gage is now an Army doctor assigned to a field hospital in South Korea. Other speakers at this meeting included Dr. Steele F. Stewart of Honolulu, orthopedic consultant to the Surgeon General of the Army. Lieut. Col. Jack T. Rush, EUSAK surgical consultant, and Capt. James M. Shannon discussed "Cardiac Arrest," Lieut. Col. Arthur J. Carbonell, "Division Medical Service," Capt. Robert M. Edwards, "Psychiatry with the Division," and Major Ralph W. Flinchbaugh, "Division Dental Service."

NAVY

Class in Hospital Administration Graduates.—The thirteenth officer class of the Naval School of Hospital Administration, Naval Medical Center, Bethesda, Md., graduated June 17. Following the exercises the graduates departed for newly assigned duty stations at Naval Medical Department facilities throughout the world. Rear Adm. Lamont Pugh, Surgeon General of the Navy, was the principal speaker for the occasion,

The school, which was established Aug. 3, 1942, has graduated 571 officers. While the Naval School of Hospital Administration was established primarily for training Medical Service and Hospital Corps officers of the Navy, officers of the Hospital Administrative branches of the Army and Air Force have been graduated from the school. The next class will convene on Sept. 2, 1952, with an expected enrollment of 40 officers.

ATOMIC ENERGY COMMISSION

AEC Will Charge for Radioisotopes Used in Cancer Studies.—Beginning July 1, 1952, the Atomic Energy Commission will charge 20% of production costs for radioisotopes to be used in the study, diagnosis, or treatment of cancer. During the remainder of the current fiscal year, ending June 30, 1952, the AEC will continue its present policy of making radioisotopes available for cancer studies and treatment free of charge for production costs. More than $1,400,000 worth of radioisotopes have been distributed under this program since 1948. Users have paid transportation and handling costs, but the cost of production has been borne by the AEC.

The following table, which includes the isotopes most commonly used in cancer research and therapy, shows the prices per millicurie that will be charged for cancer use, in comparison with noncancer use:

	Cancer Use	Noncancer Use
Radioiodine 131	$0.15	$ 0.75
Radiophosphorus 32	0.22	1.10
Radiogold 198	0.05	0.24
Radiocarbon 14	7.20	36.00

To obtain radioisotopes for 20% of the catalog price, users must specify that the material will be used for cancer research, diagnosis or therapy. Radioisotopes for use in the synthesis of radioisotope-labeled compounds will be distributed at 20% of catalog price, provided that the labeled compounds are for cancer research, diagnosis or therapy at the applicant institution, and the synthesis is performed in the applicant's laboratories. Private firms which supply labeled compounds to users may obtain replacements or radioisotopes from the commission at 20% of catalog prices, provided they show that the original material was obtained from the commission or one of its distributors and the compound was delivered to a person holding an authorization to receive radioisotopes at 20% of production cost.

PUBLIC HEALTH SERVICE

Appoint Another Assistant Surgeon General.—Dr. G. Halsey Hunt has been appointed an Assistant Surgeon General of the Public Health Service to serve as associate chief of the Bureau of Medical Services, which is under the direction of Dr. Jack Masur. The Bureau of Medical Services administers most of the direct medical care functions of the Public Health Service, managing its 22 hospitals in major seaport cities and over 100 outpatient facilities. The bureau also includes the Division of Foreign Quarantine, divisions concerned with medical, hospital, dental and nursing resources, and is responsible for the administration of the Hospital Survey and Construction Act.

Dr. Hunt entered the Public Health Service as a commissioned officer in 1936. He is a diplomate of the American Board of Surgery.

Advisory Committee on Foreign Students.—The newly-appointed Public Health Service advisory committee on foreign students and visitors held its first meeting in May. The committee was appointed by the Surgeon General to advise the service's Division of International Health, which gives program assistance to foreign students and visitors who come here for advanced training in medicine and health under federally-sponsored programs of technical aid to underdeveloped areas. The new committee will give particular attention to the following: orientation of students; counseling and guidance for both professional work and social and psychological adjustments; developing language facility; maintaining professional relationships; and evaluation of experience in the United States.

In recent years the number of federally-sponsored students and visitors who have come here for advanced study in health and medicine has been expanding. During last year, the Division of International Health has given program assistance to about 700 advanced students of this type. The majority are sponsored by the Technical Cooperation Administration (Point Four) and the Mutual Security Agency. Others are also helped who come here under sponsorship of their own governments or other agencies.

Sewage Treatment Projects.—Municipalities have awarded contracts for the construction of 111 sewage treatment projects in 33 states during the first quarter of 1952, the Public Health Service reports. Over 2 million people will receive new or improved service when these projects are completed. The Public Health Service cooperates in this work by developing plans to abate pollution and by providing research and technical assistance. The Water Pollution Control Act of 1948 authorized these services as well as financial aid in the form of grants to the states for investigations of water pollution caused by industrial wastes. Of the 111 projects reported, 72 are new plants being built at a total cost of about 17 million dollars. The other 39 consist of additions, enlargements, or replacement of existing plants.

The Surgeon General said, "Comparison with construction figures for the same months of previous years, reveals that the present rate of construction is less than the average for the years 1948-1952. It meets only about one-fourth of the need for catching up with the backlog and for meeting new needs arising from the growth of our cities and industries. In addition, existing plants must be replaced as they become obsolete. This will become increasingly important as more and more plants built 20 or 25 years ago reach a point where their effectiveness is sharply limited." A national summary report published by the Public Health Service in 1950 showed that of the 10,400 industries known to be discharging wastes, nearly 3,500 needed new or additional waste treatment facilities while over 5,500 more had undetermined needs.

FOREIGN LETTERS

BRAZIL

Vital Statistics of Rio de Janeiro.—The 1951 vital statistics of the city of Rio de Janeiro permits an analysis of a complete 10 year period, which shows some noteworthy progress. If we compare the average annual rates for the five year period 1942-1946 with the corresponding rate for the year 1951, we find that there was a continuous trend of the figures. The annual death rate from all causes declined from an average of 16.7 per thousand population for the initial five year period to 12.6 for 1951, which correlates with a corresponding increase in the annual birth rate, from 20.7 to 22.5 per thousand population. The maternal mortality declined from an average annual rate of 6.32 deaths per thousand live births for the five years to 3.53 for the year 1951, and so did the infant death rate, from 144 deaths per thousand live births to 107. The most important transmissible diseases also showed a similar reduction: tuberculosis of all forms declined from 310 deaths per hundred thousand population to 188; typhoid, from 6.76 to 2.71; dysentery, from 13.61 to 5.34; diphtheria, from 5.17 to 4.37; measles, from 11.45 to 2.76; and whooping cough, from 11.44 to 4.49. There is, however, an increase in the death rates from cancer, diseases of the heart, and motor vehicles accidents, which passed from 66.5 to 75.1, from 173 to 221, and from 14.5 to 22.7 deaths per hundred thousand population, respectively. The only comfort is that this is occurring in many other places.

Laboratory Diagnosis of Strongyloidiasis.—The studies on strongyloidiasis in Brazil have not been very accurate in the past, this helminthiasis having been, as a rule, referred perfunctorily in papers treating other intestinal parasitic diseases. This may explain the great differences in the incidence rates presented by several authors, besides the fact that a diversity of laboratory techniques are used, as indicated in various papers. Recently, however, the improvements in the technique used in a few surveys have contributed to a more extended knowledge of some of the epidemiological aspects of the disease and a better understanding of its pathology. In reference to the state of São Paulo alone, the range of incidence, as reported by different authors, has varied, between 1920 and 1951, from 0.84% to 35.02% (Pessoa, Guerner, Meira, Cardoso, Taunay, Pontes, and Amaral) for districts that seemingly were expected to present narrower variation. In 1951, using more refined diagnostic methods, Coutinho, Campos, and Amato found 35% of infected persons among 500 patients at the Hospital of the São Paulo State University, and Mercer found 33.1% of positive cases among 4,828 persons examined in Rio Preto by means of Baermann's method.

This led Drs. J .O. Coutinho and Julio Croce, of the department of parasitology, São Paulo State University, to undertake a systematic study of 176 persons found infected with Strongyloides stercoralis by the aggregated results of the direct examination method, the Petri dish method, and the spontaneous sedimentation in water and the Baermann's methods, in order to try to disclose the best individual diagnostic method. While the direct examination method recognized 32.22% of infected persons, the Petri dish and the sedimentation methods gave 64.77 and 66.47% of positive results, respectively, and the Baermann's method, 91.9%. As it is seen, the best results were given by the Baermann's method, notwithstanding the fact that it did not reveal the presence of the parasite in 8.1% of infected persons.

To push the investigation as far as possible, the authors decided to examine 60 patients by the Baermann's method for three days in succession. Out of a total of 25 patients found positive after three examinations, 70.83% were disclosed after the first examination, 91.66% after the second, and the rest after the third. These results, which show that one examination alone is not sufficient for an exact diagnosis, may be explained by a certain intermittence of the elimination of larvae naturally conditioned by the particular biology of the species S. stercoralis, as it has already been shown by Maciel for Schistosoma mansoni in connection with the variations of the atmospheric pressure.

Complement Fixation Test in American Trypanosomiasis.—The studies on American trypanosomiasis (Chagas' disease) made during the last five years have led to the definitive conclusion that the only practical way to ascertain the various degrees of the incidence of the disease in different regions is by means of mass laboratory examinations. A paper published five years ago by Dr. J. Pedreira de Freitas of the department of parasitology, São Paulo State University, on the basis of the literature and the material he could himself collect, demonstrated that the complement fixation test is the principal laboratory resource for the diagnosis of chronic cases of the trypanosomiasis. After the demonstration by Kelser of the value of the antigen derived from cultures of Trypanosoma cruzi, Dr. Freitas, with the collaboration of Dr. J. O. Almeida, also of the department of parasitology, began to use the new technique, modified, in 1949, to be adapted to the quantitative technique as proposed by Wadsworth, Maltaner, and Maltaner. He has now reported the results of the examination of the serum of 7,612 persons living in rural sections of the states of São Paulo, Goiás, Pernambuco, Paraiba, Minas Gerais, and Paraná. On the basis of the results obtained in tests performed with sera from well-proved cases of infection by T. cruzi and from persons only suspected to have the infection, as well as several thousands of healthy persons used as controls, Freitas established the criteria for the interpretation of the tests as follows: (1) nonreacting sera, (2) sera reacting with titers varying from 1.5 to 1.9, and (3) sera reacting with titers higher than 1.9. The results of the first group are considered "negative," those of the second "doubtful," and those of the third "positive," the latter including persons surely or possibly infected with T. cruzi. The values 1.5 to 1.9 mark the limits of the group called "doubtful," which includes sera with very low level of antibodies, in certain cases being produced by infections from other parasites than T. cruzi but related to it, as it frequently occurs in all other protozoa. Out of the total 7,612 sera, 6,081, or 79.9%, were negative; 142, or 1.9%, were doubtful; and 1,389, or 18.2%, were positive.

Dr. Freitas claims that the method, as improved by him, presents the following advantages: (1) exact standardization and dosage of the reagents, which can be used under optimal activity; (2) possibility of performance of the preliminary test, which excludes, by means of an extremely simplified reaction, all nonreacting sera; (3) possibility of expressing numerically the reactivity of the sera; (4) high sensibility for the diagnosis of the chronic forms of the infection, which are the most important epidemiologically; (5) high specificity, even in the case of patients infected with leprosy or presenting tegumentary leishmaniasis; and (6) great stability of the antigen, permitting comparable results from different laboratories.

DENMARK

Legal Abortions.—The law of May, 1937, concerned with pregnancy, did not come into force till October, 1939. It hinges on Mothers' Aid Institutes, of which there are now seven. They are staffed by 17 social consultants under the direction of a legal expert. Six gynecologists and 10 psychiatrists give part-time services, usually every afternoon except on Saturdays as well as two forenoons and one evening every week. About 60% of the expectant mothers attending these institutes have been found to be in need of psychiatric examination. At first about 42% of the expectant mothers were unmarried. But in the period 1949-1950 this ratio fell to 29%. These consultations are encouraged by the material aid as well as by the advice provided at these institutes. Approximately 60% of the attendants at these institutes are given such material aid in some form or other.

The items in these letters are contributed by regular correspondents in the various foreign countries.

The drafters of this law assumed that a woman's own private physician would be her chief adviser. The operating gynecologist was also assumed to play an important part in weighing the considerations for or against the induction of abortion. Both types of physicians do, indeed, play their allotted roles, but not to the extent anticipated. This trend, in favor of the institutes, was implemented in the law of 1946, which stated that women desiring abortion for personal, social, or economic reasons must apply to a Mothers' Aid Institute. The motives for driving a woman to require the induction of abortion may be classed in three groups of approximately equal size. Fully one-third are influenced by actual disease (and it is this third that provides most of the cases for which an institute advises abortion), while a third are prompted by personal difficulties and considerations, and another third by economic burdens.

Between 1940 and 1950 there was an enormous rise in the number of legal abortions in Denmark, with only 522 occurring in 1940 as compared with 3,969 in 1950. During the period 1940-1950, both years included, there were 38 deaths, 25 of which were directly due to the operation, while the remaining 13 deaths were due to other causes. The operation mortality has fallen from 0.19% in 1940 to 0.13% in 1950, being 0.12% for the whole of the period under review. This fall in the operation mortality may be due in part to the growing proportion of physically healthy women operated on. In the Scandinavian countries more than 50% of all the indications for the legal induction of abortion come under the heading of *depressio mentis*. Though reliable statistics are not available concerning the frequency of criminal abortions, it is suspected that they, like legal abortions, have become more frequent in recent years.

Treatment for Kidney Trauma.—At Department D of the Bispebjerg Hospital, Dr. J. C. Christoffersen has undertaken an analytical study of the comparative merits of expectant and operative treatment for kidney trauma. His material comes from two sources. The first is represented by the accident insurance office in which, during the period 1944-1949 inclusive, there were 70 cases of kidney trauma on record, or an annual rate of 11 or 12 such cases. This total was composed of 64 men and only 6 women. In as many as 16 cases the kick of a horse or cow was responsible for the trauma. There were also four cases created by Gestapo torture (clubbing over the loins). The trauma was classed as a contusion in 50 cases and as a rupture in 20. Among the rupture cases there were only three with no subjective or objective sign of disease from one to three years after the trauma. Dr. Christoffersen's other material consists of the 26 cases of recent kidney trauma treated at his hospital in the period 1928-1950. Among these cases there were 18 simple contusions, 2 "dilacerations," and 6 ruptures. The chief lesson to be abstracted from these materials is an endorsement of Lowsley's dictum with regard to rupture of a kidney: "The conservative thing is to operate on that patient, and the radical thing is to leave him alone." But Dr. Christoffersen prefers if possible to operate late rather than early, and he is a keen advocate of urographic control of these cases both early and late. His review of the literature also shows that the late results of conservative treatment of kidney rupture are bad in about one-third of all such cases.

Private or State Social Service?—Andreas Boje, whose association with social welfare in Denmark gives authority to his words, has been invited by the editor of the *Danish Red Cross Magazine* to give his opinion of the contribution private enterprise has made to social services in the recent past. The questions he has set himself to answer are: 1. Does private enterprise play a smaller or a greater part than it did 30 or 50 years ago? 2. Do the various private enterprises work well together and with public services? 3. Does private enterprise neglect new opportunities? One thing, at any rate, is clear. Since the turn of the century the state and municipal authorities have taken over many of the activities started by private enterprise. But at the same time the encroaching wave of public control has been countered by the assumption of new undertakings by private enterprise to a degree far in excess of the achievements of the past. One of the most typical examples of private enterprise is the National Association for Combating Tuberculosis, which was started by two young physicians in 1901. Only a year later its membership had risen to 20,000, and when the first sanatoriums were launched under its auspices in 1903, its membership was 30,000. Since then this association has gone from strength to strength, and the position it holds in the minds of all Danes at the present time is unique. Yet it is only one of many such voluntary bodies, the outcome of private enterprise.

In 1938 another voluntary organization was created, the Mental Hygiene Association, for which Herr Boje prophesies as great a success as the National Association for Combating Tuberculosis has enjoyed. In infant and child welfare, public and private enterprise vie with each other in the initiative they show. Of the 527 infant and child welfare centers existing in 1948, only 101 were municipal, while the remaining 426 were private. In the spring of 1951, the total had risen to 687, and while 166 of these institutions were municipal, 521 were private. Herr Boje makes the challenging statement that though there may be more organized public and private welfare work now than formerly, this does not necessarily mean that human beings are more directly and personally helpful to each other than they were. It means rather that a change has come over the structure of the community with the development of urban life, and much of the aid one man gave to another is now taken over by organizations.

The Late Professor Carl Edvard Bloch.—Professor Bloch, who was born on Sept. 21, 1872, and who died on Feb. 11, 1952, was already well known as a pediatrician in Denmark when, in December, 1916, at a meeting of the Copenhagen Medical Society, he advanced the theory that xerophthalmia is caused by a factor found in and associated with fats. This, the first clinical discovery of vitamin A, was the outcome of patient research between 1912 and 1916, when Bloch became convinced that there was some causal relationship between xerophthalmia early in life and a diet deficient in fats. At this time Bloch was unaware of the experimental work on the subject being done by McCollum and Davis and by Osborne and Mendel, with whom he shares the honor of the discovery of vitamin A. He was an inspiring teacher, and much work on vitamins B, C, and D was done by his pupils. Even after he had retired, in 1943, he took an active part in the examinations of medical students.

ICELAND

Status of Medicine.—As the next Scandinavian Medical Congress may be held in Reykjavik in the summer of 1954, physicians planning to attend may wish to know something about medical activities in Iceland. There are about 140,000 inhabitants, of whom 60,000 are in the capital, Reykjavik. The total number of physicians in the country was 186 on Jan. 1, 1952; of these, 101 are residing in the capital. With few exceptions they all have been educated in the medical faculty of the University of Iceland or its forerunner, the "Medical School." The University was founded in 1911, though its main buildings were not completed till 1940. The medical course ordinarily takes about seven years followed by compulsory six months internship in an approved medical department, six months in a surgical department, and six months as a secretary to a district medical officer of health in rural areas. Fairly strict rules apply to the postgraduate education of specialists, many of whom must get their specialist training abroad. The academic degrees in the Faculty of Medicine are "candidatus medicinae et chirugiae," which after the obligatory internship of one and one-half years qualifies the bearer to the license of general practice. The title "Doctor medicinae" is comparable to the North American Ph.D. and is conferred either *honoris causa* or on acceptance of a thesis, in the form of a printed monograph. It is usual for graduates in medicine to supplement their education by visits abroad, to Denmark and the United States in particular.

The hospital services of Reykjavik consist of a University Hospital with about 175 beds, 55 being devoted to medical, surgical, and obstetrical cases each. On the hospital grounds is an institute of general pathology. Just outside Reykjavik is a new institute of experimental pathology and the psychiatric hospital, Kleppur, with accommodations for about 275 patients. All these state institutions are headed by members of the medical faculty, including Johann Saemundsson in medicine; Guómunder Thoroddsen, surgery (to be replaced by Snorri Hallgrimsson next, autumn); Peter Jakobsson, obstetrics; Hannes Guómundsson, venereology; Niels Dungal, pathology; Björn Sigurósson, experimental pathology; and Helgi Tómasson, psychiatry.

There is also a private Catholic General Hospital with about 100 surgical beds and about 40 medical beds, the hospital being under the charge of Halldor Hansen but run on "British line" with several practicing physicians each taking care of his own patients. A small community hospital accommodating 40 patients is run on the same lines. Just being planned is a new municipal hospital for 300 patients. Under erection is a new building for the "health centre," accommodating various aspects of preventive medicine. Outside Reykjavik there also is the Vifilstaoir Sanatorium for about 200 tuberculous patients and Reykjalundur, a model colony for the rehabilitation of tuberculous patients. In the north of Iceland is another sanatorium for about 80 tuberculous patients. In the immediate vicinity of Reykjavik is a small leprosarium, housing the eight residual patients in the country. In various communities other than Reykjavik there are local general hospitals, with about 500 beds in all.

Medical Administration.—Administratively, Iceland is divided into 51 medical districts, each with its own medical officer in charge of all public health services, as well as, in most cases, individual cases of sickness. Several of these physicians are also specialists in some branch of medicine or surgery. There is a chief medical officer for the whole country, assisted by the "Medical Council" of eight: the university teachers in medicine, pathology, pharmacology, hygiene, psychiatry, and surgery; the chief officer of the National Health Institute; and the president of the Icelandic Medical Association. The three members representing pathology, psychiatry, and surgery constitute the medicolegal division of the council.

National Insurance Institute.—There is compulsory health insurance for everybody, having been adopted gradually since 1936. It is an independent institution, administered by the Insurance Council, elected four times a year by the Parliament. It is based on personal subscriptions from everybody over 16 (children under 16 being counted with their parents), the government in addition paying 25% and each local community another 25% of the total subscriptions. The insurance covers the cost of all hospital services, all medical fees, except dental, a few specialist consultations, of which 75% of the fee is paid, about 50% of the cost of medicine, and also a few other services of minor importance. The insured persons are allowed to choose their own general practitioner for a year at a time. But changes after the year are very few. Experience shows that many persons consult physicians privately, despite the insurance. In Reykjavik the average income of those working for the Health Insurance is now about 75,000 kronur a year, a little more than $4,500 (the cost of living approximates that of the United States). There is also compulsory old age and accident insurance. Old age pensions are paid after the age of 67.

Geomedicine.—During most of the year the climate is vigorously stimulating, unstable, and relatively humid, the average temperature (in Reykjavik) in the coldest month being just below 0 F and in the warmest about 65 F. The national diet is high in animal protein, high in fats, and relatively low in carbohydrates. The average amount of daily calories is about 3,400. Arteriosclerosis seems to be a relatively rare condition, and the inhabitants look younger than they are. Diabetes mellitus is rare. Manic-depressive psychosis is the preponderant psychotic reaction type. Rheumatic fever is extraordinarily rare. The normal thyroid gland is quite small, myxedema a rarity, and the normal white blood cell count is low (about 5,000). Tuberculosis used to be a scourge but is on a very rapid decline, nearing the rate in the other Scandinavian countries. Cancer is now heading the list of causes of death. Infant mortality is about the lowest in the world, and so also is the death rate. The average life expectation is at present about 68 years.

The Medical Association of Iceland, comprised of all members of the profession, meets annually and is a member of the World Medical Association. There is a local medical association in Reykjavik and one in Akureyri in the north of Iceland. In Reykjavik there is also the medical association EIR, a forum devoted only to matters of research or more theoretical interest. The medical association of Reykjavik issues *Laeknabladid,* monthly, as the official organ of the profession.

LONDON

Charges of National Health Service.—Much of the time of Parliament, in both the House of Commons and the House of Lords, is taken up with discussing the charges of the National Health Service. In February, 1952, a bill was introduced in the House of Commons that would give effect to certain proposals by the Chancellor of the Exchequer.

These proposals include a charge for certain appliances, such as surgical boots, abdominal supports, wigs, and hearing aids, and also a charge to the patients for the full cost of repairing surgical boots. These charges would not apply to school children, to persons who are completely indigent, or to those who need appliances as a result of war wounds. In addition it is proposed that outpatients, except for the indigent and war-disabled pensioners, shall be charged for prescriptions for their drugs. These items together are estimated to save $2,800,000 a year.

In the field of the family physician a charge of 28 cents is proposed for each prescription form though it may contain more than one prescription. Indigent persons receiving national assistance will be able to claim repayment. From 70 cents to $1.40 will be charged for elastic hosiery, in common with the hospitals. These charges are expected to save about 36 million dollars.

At the present time a patient has to pay 50% of the cost of his dentures, and it is now proposed that an additional fee of $2.80, or the full cost if less, will be charged for each dental treatment. In cases where both treatment and dentures are to be provided the total cost must not exceed the maximum of $12.10. Children under 16 or at school and expectant or recently delivered mothers will be exempt. By these charges it is hoped to save 21 million dollars a year.

Discussion in Parliament.—These matters are now under active discussion in the House of Commons, and it has been pointed out that the original idea of charging 14 cents for each prescription was proposed by the previous labor government. The present government intends to implement this cabinet decision. The attention of the Minister of Health has been called to the difficulty of the 4,000 rural physicians who dispense their own prescriptions, and during the first week of March a deputation from the General Medical Services Committee of the British Medical Association met the minister to discuss this charge. The General Medical Services Committee's view is that these physicians should not be made to act as intermediaries for the inland revenue. Earlier they had met the Conservative Party's Social Security and Health Committee.

Health Service Estimates.—Estimates have now been published showing the total net cost to the taxpayer of the British Health Service. Three successive chancellors of the Exchequer have imposed an arbitrary ceiling of 1,120 million dollars, and again this maximum has not been exceeded. For the year just ended the cost of the health service was 1,114 million dollars, and the estimate for the forthcoming year is 1,097 million dollars. If it is remembered that there has been a considerable rise in all prices during the last 12 months, the cost of the health service has really been reduced much more than is apparent. This reduction has been possible by legislating that the patient shall pay increased costs and not by cutting the budgets of the various branches of the service; in other words, had it not been for the charges that are to be imposed upon patients, the cost of the health service would have exceeded the arbitrary ceiling of 1,120 million dollars by about 56 million dollars.

It is hoped that the new charge for spectacles will also diminish the cost of that service, which in 1950-1951 was 78 million dollars, and the first estimate is only $30,800,000.

One of the most expensive items is the drug bill. Drugs have reached the appalling cost of 140 million dollars a year, more than one-eighth of the total cost of the service, but estimates for the coming year have reduced it by 6 million dollars.

Delay in Making Charges.—Owing to the heat of controversy in the House of Commons and the Socialists' opposition actively delaying the passage of the bill, the introduction of the new charges has been delayed and will not come into force as early as the government had intended. This means that the charges from the patients will not be as the estimates allowed for. Also it must be remembered that costs are still rising, and although the hospitals have received an increase of 56 million dollars they are not certain that they can maintain their existing services.

CORRESPONDENCE

LAWS PROHIBITING SALE OF FIREWORKS

To the Editor:—For years the benefits department of this Blue Cross Plan had noticed that from about Dec. 10 to Jan. 10 many children and adults were injured by fireworks. Through our benefits department were cleared many reports of a child losing an eye, being severely burned about the hands or face, or having a ruptured eardrum from fireworks explosions. In January, 1947, I mailed to each physician in North Carolina a card asking them to return to me in an enclosed, stamped envelope information as requested. On receipt of these cards a report was made and copies sent to each physician, each member of the state legislature, which was then in session, each hospital superintendent, and to numerous other interested persons.

The actual report made by the physicians is the most convincing I have ever seen. Numerous legislators wanted to be the one to offer a law regulating the sale of fireworks, and, in spite of the fact that fireworks manufacturers and retailers employed able lawyers to lobby for them, a law was passed in North Carolina prohibiting the manufacture, sale, possession, transportation, and/or firing of fireworks of any kind except by professionals at the state fair and/or at a circus or something of that kind.

During this 30 day period following the release of this report, every newspaper, daily and weekly, in North Carolina printed editorials in favor of such a law. Following the appearance of these editorials there simply was no resistance to the law except from the fireworks manufacturers, retailers, and their lobbyists. The law has been kept so well that in January, 1949, we made a similar survey and found that there were no serious accidents at all.

Several physicians and surgeons in North Carolina appeared voluntarily before the hearings of the legislature and insisted that the law be passed. In the spring of 1951, during the session of the legislature, one legislator submitted a bill to abolish the fireworks law. A few days after this act three small boys were killed by the explosion of a large gas truck that was parked in their yard. It was discovered that these boys were igniting and exploding fireworks near the truck. This was given considerable publicity in our newspapers, and no more mention was made of a change in the law. If the American Medical Association would obtain laws in all of the states similar to the one in North Carolina and many other states, this one act should result in much credit to the Association.

E. M. Herndon
Executive Vice President
The Hospital Care Association, Inc.
Durham, N. C.

TALC PNEUMOCONIOSIS

To the Editor:—The article "Talc Pneumoconiosis," by Drs. Friedman, Bell, and Solis-Cohen, in The Journal, April 19, 1952, page 1418, deserves critical comment.

The authors are apparently unaware of the wide variation of materials used in industry under the name "talc." The mineral talc is a specific substance—hydrous magnesium silicate, $H_2Mg_3SiO_3)_4$. However, many other materials, such as serpentine, (also hydrous magnesium silicate, but $H_4Mg_3Si_2O_9$), dolomite (calcium magnesium carbonate), and tremolite (calcium magnesium silicate) are frequently associated with it in varying amounts. Also pyrophyllite (a hydrous aluminum silicate) and soapstone (a cryptocrystalline form of true talc) are used industrially many times for the same or similar purposes as talc, and are commonly referred to as "talc." Williams (Talc Dust in the Rubber Industry, *Safety Engineering* 73:49-51 [April] 1937) and Schulz and Williams (Commercial Talc: Animal and Mineralogical Studies, *J. Indust. Hyg. & Toxicol.* 24:75-79 [April] 1942) have indicated the variation in composition of "talcs" as used in industry, and the indefiniteness of the physiological response.

The authors are also apparently unaware of the wide variation in free silica content existing in commercial materials referred to as talcs. I have found this to range from a trace, in the case of a high grade true talc or soapstone, to 40% for the lower grades of pyrophyllite. It is unfortunate, from the standpoint of advancing our knowledge of pulmonary pneumoconiosis, that this paper, like many others on the same subject, fails to define the conditions of exposure more accurately.

W. E. McCormick
Department of Industrial
Hygiene and Toxicology
B. F. Goodrich Co., Akron, Ohio.

AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE

To the Editor:—I have read in the May 10 issue of The Journal, page 169, the editorial entitled "Eradication of Malaria." I should like to congratulate you on the excellence of this editorial, which is in keeping with editorials on the same subject in recent years in your journal.

I should like to point out an error in the reference to Dr. Russell's article, the reference being listed as The American Journal of Tropical Medicine, volume 1, 1952. The name of the journal is incorrect. There is no longer an American Journal of Tropical Medicine, as the society, along with the National Malaria Society, was dissolved at the Chicago meeting in November, 1951. A new society was formed by the amalgamation of the National Malaria Society and the American Society of Tropical Medicine, which new society is known as the American Society of Tropical Medicine and Hygiene. It publishes a new journal under the name of the *American Journal of Tropical Medicine and Hygiene*, which starts volume 1 with the beginning of the calendar year 1952.

Because of the importance of your journal in referring to and abstracting articles, we are particularly anxious that the reference to the new *American Journal of Tropical Medicine and Hygiene* be correctly shown.

Martin D. Young, Sc.D.
President, American Society of Tropical Medicine
and Hygiene
P. O. Box 717
Columbia, S. C.

HIATUS HERNIA

To the Editor:—In the article "The Gastrointestinal Tract in the Aged" by Sidney A. Portis and Joseph C. King, which was published in the March 29, 1952, issue of The Journal, there is an error in the use of a report written by me.

In the paragraph "Examination of Esophagus" it is stated "There were 10 (7.5%) with hiatus hernia—a finding which contrasts with that of Brick,[27] who reported that 76.6% of his patients between 50 and 80 had hiatus hernia." The exact article of mine which was used is not given, as references were omitted, but my data appeared in three articles: *Mississippi Valley Medical Journal* (71:2 [Jan.] 1949), *Archives of Surgery* (58:419 [April] 1949), and *Archives of Surgery* (60:1045 [June] 1950).

In those articles it is stated that of the 308 patients with hiatus hernia, 76.61% were between the ages of 50 and 80, which is different than saying that 76.6% of the patients between 50 and 80 had hiatus hernia. Actually, 3,448 patients were studied, and the incidence of hiatus hernia is given as 8.93%, which, rather than contrasting, compares fairly closely with the figure of 7.5% in the series given by Portis and King.

Irving B. Brick, M.D.
Assistant Professor of Medicine
Georgetown University Hospital
Washington 7, D. C.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Basic Science Acts: Examination Given Chiropractic Applicants Held to Be Fair and Reasonable.—The relators filed a petition for a writ of mandate to compel the respondent, the board of basic science examiners, to either give the relators a passing grade or permit them to take a new basic science examination. From a judgment denying such writ, the relators appealed to the supreme court of Washington.

It was contended by the relators that the basic science examination given by the respondents in January, 1950, did not comply with the law requiring that it be elementary in character and, further, that they had passed as much of the examination as was properly elementary. It was also alleged that the respondents acted capriciously, arbitrarily, and in abuse of their discretion in preparing the questions and grading the examination papers.

To practice chiropractic in this state, said the supreme court, it is necessary to have a license. To secure such a license, it is necessary, among other things, that the applicant take an examination in the sciences of anatomy, physiology, chemistry, pathology, and hygiene. This examination must be taken by all persons applying for licenses to practice medicine and surgery, osteopathy, osteopathy and surgery, chiropractic, or drugless therapeutics, and it must be passed before the applicant can take the further examination required in the particular branch of the healing arts in which he desires to practice. This preliminary examination is to be of such a character as to constitute an adequate test as to whether the person examined ". . . has such knowledge of the elementary principles of such sciences as taught at the University of Washington and Washington State College, in one year's instruction of thirty-six weeks, or as taught in one year's instruction of thirty-six weeks at any college or university accredited by the University of Washington, or the equivalent thereof."

The relators, desiring to be licensed for the practice of chiropractic, took the January, 1950, examination as prepared and conducted by the respondent board. The examining committee is appointed by the governor and its members must be members of the faculties of the University of Washington and Washington State College. The relators refused to answer questions that they deemed went beyond the elementary phases of the basic sciences and instead wrote statements such as the following: "Not elementary." "This question is not elementary." "Any further discussion is not considered elementary according to Basic Science law, State of Washington."

"This question is not elementary. It requires a detailed knowledge of physiology and of organic chemistry. Definitely it is not elementary." "This is not basic to the work of other [than medical] healing arts such as chiropractic. Thus this part of the question is not basic to all the healing arts, but only to one profession, namely medicine." The relators received a grade of zero on every question they refused to answer, and they all failed to secure a passing grade in the examination.

The issue, then, was whether the January, 1950, examination in the basic sciences was confined to the elementary principles of those sciences ". . . as taught at the University of Washington and Washington State College, in one year's instruction of thirty-six weeks, or as taught in one year's instruction of thirty-six weeks at any college or university accredited by the University of Washington, or the equivalent thereof."

Mention is made of the fact that anatomy, pathology, and physiology are now taught in the medical school of the University of Washington and not in departments of the college of liberal arts and sciences, as they were in 1927. It is clear, said the court, that at the university there are elementary courses in physiology available outside of the medical school, and that admission to the anatomy and pathology courses taught in the medical school is not limited to medical students. The relators have not established that they were in any way prejudiced or handicapped by the fact that anatomy, physiology and pathology are now taught in the medical school at the University of Washington.

Nor, continued the supreme court, are we impressed with the relators' suggestion that the examination should take into consideration the basic science courses as taught in 1927, when the basic science law was passed. Time and the sciences march on.

The evidence of the respondents, supported as it was by the testimony of an eminent authority in each of the five sciences covered by the examination, makes it impossible for us to arrive at any conclusion other than that, with very minor exceptions involving one tenth of one question in physiology and three tenths of one question in chemistry, the relators were asked nothing that is not elementary within the limitations placed on that term by the statute. We are convinced from a study of the record before us that not only did each of the relators fail to secure a passing grade on the questions that were elementary but that any college student who had successfully taken a first year course in each of those sciences at any college accredited by the University of Washington could have passed the examination without difficulty. There is absolutely no evidence that the respondents acted arbitrarily or capriciously either in the preparation of the questions for the examination or in the grading of the answers of the relators. We agree with the trial court that the relators entirely and completely failed to make out a case. The judgment of the trial court denying the relators a passing grade or the right to take a new examination was accordingly affirmed. *State ex rel. Cousineau et al. v. Johnson, et al., 235 P. (2d) 289 (Washington, 1951).*

MEDICAL MOTION PICTURES

NEW FILMS ADDED TO A. M. A. LIBRARY

The Nation's Mental Health: 16 mm., black and white, sound, showing time 19 minutes. Produced in 1951 by the March of Time. Procurable on loan (service charge $2.00) from Committee on Medical Motion Pictures, American Medical Association, 535 N. Dearborn St., Chicago 10.

This is a report on the National Mental Health Act of 1946, the training and role of the psychiatrist, a survey of the various treatments and methods of therapy, and a description of the work of the National Association of Mental Health in helping communities to set up mental health clinics. This is a clear, fair, positive overview of the picture of the present status of the mental health problem. It is restrained in its presentation of alarming data; it points out the importance of both the psychologist and psychiatrist and gives positive suggestions on the development of mental health programs at the local level. The photography and narration are good. This film would be useful and informative for all lay audiences of senior high school age and up.

Wonder Engine of the Body (*The Human Heart*): 16 mm., black and white, sound, showing time 11 minutes. Produced in 1951 by the Bray Studios, Inc., New York, in cooperation with the American Heart Association. Procurable on loan (service charge $1.00) from Committee on Medical Motion Pictures, American Medical Association, 535 N. Dearborn St., Chicago 10.

This film shows, by a series of actual photographs and animated diagrams, the nature of the activity of the heart and gives in qualitative terms, with the help of mechanical analogies, a vivid conception of the magnitude of the work done by the heart. The film is scientifically accurate, and the applications to hygiene are clear. The type of presentation and the excellent pace enhance this film. The photography and narration are well done. It is recommended for use in hygiene and physiology classes in junior and senior high school and by physicians who are called on to lecture to lay audiences on this subject.

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

American Journal of Medical Sciences, Philadelphia

223:117-228 (Feb.) 1952

*Clinical Use of Cation Exchange Resins in Treatment of Congestive Heart Failure. E. J. Callahan III, N. R. Frank, H. Kraus and L. B. Ellis. —p. 117.
Effect of Antabuse on Electroencephalogram. E. W. Busse, R. H. Barnes and F. G. Ebaugh.—p. 126.
Effort Syncope as Early Manifestation of Primary Pulmonary Hypertension. W. Dressler.—p. 131.
*Placental Serum Therapy for Rheumatoid Arthritis. W. Aronson, F. Levy, L. J. Besen and M. Leff.—p. 144.
*Cross Transfusion: III. Clinical Experiences with 6 Cases. P. F. Salisbury, A. A. Bolomey and J. H. Miller.—p. 151.
Changes in Circulating Blood Eosinophils Following Acute Myocardial Infarction. D. Feldman, C. Silverberg, A. Birenbaum and S. Jick. —p. 168.
Effect of Disease on Erythrocyte and Plasma Potassium Concentrations. M. P. Hutt.—p. 176.
Argentaffin Cells and Pernicious Anemia. E. Landboe-Christensen.—p. 182.
N-Allyl-Normorphine in Treatment of Morphine or Demerol Narcosis. J. E. Eckenhoff, J. D. Elder Jr. and B. D. King.—p. 191.
Progress Report on Acute Intestinal Obstruction. P. Nemir Jr.—p. 198.
Edema of Optic Disks in Cases of Encephalitis. H. P. Wagener.—p. 205.

Cation Exchange Resins in Congestive Heart Failure.—Callahan and co-workers studied the effect of prolonged administration of cation exchange resins to patients with congestive heart failure. In 22 outpatients treated with an ammonium-potassium carboxylic resin, diets without salt were instituted, ammonium chloride was discontinued, and mercurial administration was decreased when treatment with the resin was initiated. Twelve patients responded satisfactorily. In three of these, the cardiac status improved, and nine were maintained unchanged but with a liberalized salt intake and less diuretic medication. In 10 patients congestive symptoms increased. In two this coincided with an acute respiratory infection and in five with toxic effects of the resin. In three there was no obvious reason for the increase. Gastrointestinal symptoms were the commonest toxic manifestations, occurring to some degree in 20 patients, and necessitating termination of resin therapy in 7. Evidence of excess digitalis effect was noted eight times. Acidosis and toxic skin rash also were observed. This type of resin appears to be comparatively safe for general clinical use with close supervision. In 22 ambulatory hospitalized patients who were treated with an ammonium sulfonic resin for from 1 to 21 weeks, other treatment was modified in the same manner as described for the carboxylic resin group. Seven patients did not improve with resin administration. Supplementary calcium therapy in four patients in whom hypocalcemia developed made the resin therapy ineffective. Hypocalcemia and hypokalemia were the commonest toxic effects and limit the usefulness of this resin. Gastrointestinal symptoms and digitalis toxicity were also seen.

Placental Serum Therapy for Rheumatoid Arthritis.—Reasoning that substances active against rheumatoid arthritis might be present in the placental circulation, Aronson and associates collected serum from placental blood and used it in treatment of rheumatoid arthritis. The amount of blood collected from a single placenta varied from 20 cc. to 200 cc. (average, about 70 cc.). The blood was refrigerated for three to five days and then the supernatant serum was filtered into a sterile bottle and pooled. The serum was shaken before use to insure uniform distribution of the active substances. The arthritic patients were given 10 cc. of this serum intramuscularly twice a week. A total of 35 patients (33 with rheumatoid arthritis and 2 with Marie-Strümpell disease) were treated with the serum for from three months to one year. The degree and rapidity of improvement depended on the duration and the severity of the disease. The results were better in the more recent cases and in the younger age group. Definite, although slow, improvement occurred, however, in 30 of the 35 patients. Improvement began following the fourth or fifth injection, and continued one or two days. After the patients had received from 20 to 40 biweekly injections, the interval between injections could be lengthened to one week in about one-fourth of the patients. In nine cases clinical remissions lasted one to six months. In patients who relapsed retreatment again yielded good results. The serum is easily obtained, is plentiful, costs little, and has no untoward effects.

Cross Transfusion.—Reciprocal blood transfer brings about admixture of the blood of two persons. When organs of one of the two are not working efficiently, their functions can be taken over by the other. Reciprocal blood transfer should make it possible to readjust derangements of internal homeostasis, normalize electrolyte levels, furnish needed metabolic substances, and remove accumulated wastes. Reciprocal blood transfer can be accomplished by parabiosis, cross circulation, and cross transfusion. When the venous circulation is used, reciprocal blood transfer is called cross transfusion. It can be performed easily, with little trauma to tissues or blood constituents and with accurate measurement and control of the blood flow. Salisbury and his associates review the recent literature on the use of this method in about 260 cases and report their own observations in six cases. Large volumes of blood (25,000 to 50,000 cc.) were transferred reciprocally in these six instances. Encouraging results were obtained in several of these and in many others reported in the literature. Undesirable reactions to reciprocal blood transfer include hypotensive phenomena, urticaria, or delayed transitory febrile responses. In one donor a peculiar syndrome developed about 10 days following a cross transfusion and consisted in severe bone marrow injury, damage to the liver, spleen, and kidney, and death. The causes of these reactions and the possibilities of their avoidance are discussed. It is felt that cross transfusion may at present be performed only in selected patients for whom no other treatment is available. The donor should be informed about the experimental character and potential risks of the procedure.

American Journal of Medicine, New York

12:137-260 (Feb.) 1952. **Partial Index**

*Effects of Cortisone in Sarcoidosis: Study of 13 Patients. L. E. Siltzbach. —p. 139.
Joint and Skeletal Muscle Manifestations in Sarcoidosis. G. B. Myers, A. M. Gottlieb, P. E. Mattman and others.—p. 161.
Effect of Cortisone in Hodgkin's Disease. B. Straus, A. S. Jacobson, S. A. Berson and others.—p. 170.
Serum Complement in Acute Glomerulonephritis and Other Renal Diseases. E. E. Fischel and D. C. Gajdusek.—p. 190.
Acquired Hemolytic Anemia as Presenting Syndrome of Lupus Erythematosus Disseminatus. E. L. Dubois.—p. 197.
Sarcoidosis: Review with 24 Additional Cases. B. R. Gendel, J. M. Young and D. J. Greiner.—p. 205.
Angiocardiography in Congenital Heart Disease. C. T. Dotter and I. Steinberg.—p. 219.

Cortisone in Sarcoidosis.—A patient with sarcoidosis, in whom bilateral involvement of the uveal tract had led to virtual blindness, was treated for 15 weeks with intramuscular injections of cortisone. The result was not only a dramatic and sustained recovery of vision, but also shrinkage of enlarged lymph nodes. This paper presents observations on 13 patients with sarcoidosis who were treated with cortisone for from 4 to 15 weeks. The daily dose was 100 to 150 mg. Five patients received the drug intramuscularly and eight orally. Objective and subjective im-

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Titles marked with an asterisk (*) are abstracted.

provement of varying degree occurred in all patients. Fresh lesions appeared to be more responsive than older ones. Of 10 patients whose course of therapy was terminated, 7 showed relapse. Thirteen post-treatment biopsy specimens were available for comparison with specimens removed prior to treatment. Ten specimens showed slight to marked regressive changes on microscopic examination.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

67:183-350 (Feb.) 1952

Translumbar Arteriography: Its Roentgenologic Interpretation. P. G. Smith, A. T. Evans, E. C. Elsey and B. Felson.—p. 183.
Roentgenological Skull Measurements and Their Diagnostic Applications. L. L. Haas.—p. 197.
Perigastric Adhesions and Bands Involving Pyloric Antrum: Diagnostic Enigma. E. L. Jenkinson, W. H. Pfisterer, R. C. Norman and K. K. Latteier.—p. 210.
Clinical Studies on Use of Controlled Intragastric Pressure for Roentgen Diagnosis of Lesions in and About Fundus of Stomach. E. L. Pirkey, H. D. Kerman, E. S. Reed and others.—p. 217.
Roentgen Appearance of Intestinal Pouches Following Lateral Anastomoses. H. R. Senturia and C. J. Heifetz.—p. 227.
Sinobronchitis in Children. S. G. Schenck and M. Seldowitz.—p. 240.
Pulmonary Sarcoidosis with Roentgenologic Appearances of Metastatic Neoplasm: Report of Two Cases. M. C. McCord and H. L. Hyman. —p. 259.
Plea for Routine Postmortem Chest Teleroentgenograms. M. H. Poppel, A. Sheinmel, H. G. Jacobson and others.—p. 263.
Placental Calcification in Roentgen Pregnancy Study. J. F. Linsman and J. I. Chalek.—p. 267.
*Treatment of Angiomas: Summary of 20 Years' Experience at Columbia Presbyterian Medical Center. G. C. Andrews, A. N. Domonkos and C. F. Post.—p. 273.
*Radiation Therapy of Malignant Melanomas. P. H. Reitman.—p. 286.
Radium Therapy for Cancer of Cervix Uteri with New Type of Colpostat. S. M. Silverstone, W. Harris and M. Greenberg.—p. 294.

Treatment of Angiomas.—Andrews and associates review a total of 1,239 cases of angiomas treated over a period of about 20 years. This group included 321 cases of nevus flammeus and nevus araneus, and 892 cases of hemangioma simplex or cavernosum. There were 26 lymphangiomas. About one-half of the patients were one year old or younger. The authors stress that the treatment with gamma ray plaques suffices for 95% of angiomas. Full strength radium plaques (5 mg. per square centimeter) are filtered through 2 mm. of brass and kept on the skin for three and a half hours. One or more of these plaques are used, depending on the size of the angioma. At least three months must elapse before treatment is repeated. Often two or three treatments suffice, and sometimes one such treatment gives a complete cure. For a few bulky hemangiomas radium is applied at a distance of 1 cm. Flat brass trays 1 mm. in thickness, which contain several small silver tubes, provide filtration equivalent to 2 mm. of brass. Although excellent results have been obtained with roentgen rays in the treatment of hemangiomas, the authors feel that treatment with gamma ray plaques or trays is more satisfactory. Injection of sclerosing solutions is of value in angiomas of the eyelids and near the eyes, although the cosmetic results are not good. Freezing with solid carbon dioxide is useful on small lesions or on those located where the cosmetic result is not important. Surgical excision was employed chiefly for removal of cicatrices and radiodermatitis. The authors conclude that one should not wait for angiomas to disappear spontaneously, because they may grow larger, become ulcerated, cause destruction of the soft tissues and disfiguring scars. The dangers of radiation therapy are not denied, but progress has been made and radium treatment with a gamma ray applicator is safe and gives the best cosmetic results.

Radiation Therapy of Malignant Melanoma.—In 42 cases of malignant melanoma seen over a period of 14 years, one-half of the patients survived for from three months to eight years after adequate therapy. Treatment consisted of irradiation alone in nine cases, preoperative irradiation in seven cases, and postoperative irradiation in seven cases. Two patients received both preoperative and postoperative irradiation, and one patient received irradiation alone to new metastatic areas and postoperative irradiation to areas previously excised. The chief purpose of this report is to show the response to radiation, which in the author's opinion has been at least as favorable as that to radical surgery. More than half of those who survived had lesions in stage 1. These patients were treated early and adequately. Also only six of the surviving group have a history of trauma or surgical "interference," such as inadequate excision, cautery, or fulguration; 15 of the nonsurviving group have such a history. The histories of seven patients are presented, chiefly to emphasize the problems occurring in the treatment of malignant melanomas. The first of these received radium plaque applications, and it appeared that 4,000 gamma roentgens is inadequate for treatment of malignant melanoma. To counteract a recurrence five years later in 1941, 8,000 gamma roentgens were given. Tissue response was adequate, and the patient remains alive and well. The author concludes that many malignant melanomas are radiosensitive to full carcinoma doses and that radiotherapy should not be limited to advanced or inaccessible tumors.

Annals of Surgery, Philadelphia

135:145-288 (Feb.) 1952

Metabolic Effects of Anesthesia in Man: V. Comparison of Effects of Ether and Cyclopropane Anesthesia on Abnormal Liver. A. B. French, T. P. Barss, C. S. Fairlie and others.—p. 145.
*Pre- and Postoperative Parenteral Maintenance of Electrolyte Balance with Salt Mixture Containing Sodium, Potassium, Chloride and Phosphate. R. Elman and T. E. Weichselbaum.—p. 164.
Carcinoma of Breast: Results of Treatment in Small General Hospital. J. J. Zellinger and G. C. Adie.—p. 173.
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Loss of Scapulohumeral Motion (Frozen Shoulder). A. F. DePalma. —p. 193.
Maxillofacial Injuries. J. T. Rush and E. P. Quarantillo.—p. 205.
Spontaneous Perforation of Large Bowel. M. F. A. Woodruff.—p. 221.
*Bacteriologic Survey of Scrub Technics with Special Emphasis on pHisoderm with 3 Per Cent Hexachlorophene. A. J. Canzonetti and M. M. Dalley.—p. 228.
Use of Solution of Twenty-Five Per Cent Glucose and Five Per Cent Alcohol in Parenteral Nutrition: Preliminary Report. F. C. Spencer and J. M. Beal.—p. 234.
*Effect of Donor Skin Desensitization and ACTH on Survival of Skin Homografts in Rabbits. H. L. Allen, R. D. Williams, C. G. Lovingood and E. H. Ellison.—p. 239.
Diagnostic Value of Vertebral Body Needle Biopsy. R. Mazet Jr. and L. Cozen.—p. 245.
Paget's Disease of Male Breast. E. L. Sarason and J. T. Prior.—p. 253.
Acute Massive Venous Occlusion in Lower Extremity. J. T. Ellis and S. W. Windham.—p. 262.
Accidental Incision of Aneurysm of Left Common Carotid Artery: Treatment by Thoracocervical Excision with Recovery. M. H. Williams. —p. 267.
Annular Pancreas. R. S. Silvis.—p. 278.
Varicosity of Cystic Vein: Hazard in Gallbladder Surgery. C. B. Ripstein and S. Lipton.—p. 284.
Intussusception of Appendix with Complete Inversion of Appendix and Protrusion from Anus. D. Dunavant and H. Wilson.—p. 287.

Parenteral Maintenance of Electrolyte Balance.—Electrolyte balances were studied in 10 surgical patients, 6 of whom were subjected to cholecystectomy, 2 to abdominoperineal resection, and 2 to gastric resection. Each patient received 2 liters of fluid intravenously per day. In seven patients the fluid consisted of 10% dextrose in water and in the remaining three patients the infusion contained 50 gm. of dextrose and 50 gm. of amino acids per liter. To one of the two liters 40 ml. of a simple salt mixture containing sodium, potassium, chloride, and phosphate ions were added as the sole electrolyte intake for two or three preoperative and five or six postoperative 24 hour periods. While a range of both positive and negative balances was observed, the mean value was in general slightly positive. The maximum cumulative balances per day in any case were +11.3 and -19.2 mEq. for potassium and +22 and -23 mEq. for sodium. This simple salt mixture when given with 2 liters of water would seem to be adequate for the parenteral maintenance of electrolyte needs by replacing the excretory losses in the urine of the average surgical patient before and after operation in the absence of unusually large abnormal losses through the gastrointestinal tract, fistula, or skin. Its use will probably reduce the incidence and severity of many postoperative electrolyte deficiencies.

Bacteriological Survey of Scrub Techniques.—Experiments with scrubbing techniques were performed with members of the surgical house staff or nursing staff acting as scrubbers to establish the relative merits of four procedures as follows: the classic 10 minute soap and water scrub; the classic 10 minute scrub followed by a 1 minute soak in a solution of 1:1,000 aqueous benzalkonium (zephiran®) hydrochloride; a scrub with pHisoderm,® a surface-acting detergent composed of sulfonated petrolatum, lactic acid, and wool fat cholesterol, in which a 3% mixture of hexachlorophene ("compound G-11") had been incorporated; and a scrub with pHisoderm® and hexachlorophene followed by a soak in aqueous benzalkonium hydrochloride. These studies demonstrated that the routine soap and water scrub was grossly inadequate. When coupled with a one minute soak in a solution of 1:1,000 aqueous benzalkonium hydrochloride, it became an effective surgical scrub, but its efficacy was not comparable to either pHisoderm® and hexachlorophene alone or to a combination of pHisoderm,® hexachlorophene, and a benzalkonium hydrochloride soak. Studies made of bacterial conditions following breaking of the benzalkonium hydrochloride film with a regular soap also revealed a mass of bacteria that was shielded by the film. The wearing of gloves caused an increase in bacteria in almost all instances, although bacterial proliferation was diminished by addition of benzalkonium hydrochloride and was almost completely inhibited in many instances by the pHisoderm,® hexachlorophene, and benzalkonium hydrochloride routine. For practical purposes, the preoperative preparation of the surgeon with pHisoderm® and hexachlorophene followed by a one minute soak in benzalkonium hydrochloride has the following advantages: effective degermation, sustained through wearing of gloves for at least one hour; ease of management and shortening of scrubbing time; absence of allergic reactions in the authors' experience involving continuous use for over one year without a case of allergy; increased safety to surgical patients; and moderate cost.

Effect of Donor Skin Desensitization and Corticotropin on Skin Homografts.—The survival of skin homografts was studied in four groups of rabbits. In the first group the animals were desensitized by injections intravenously, subcutaneously, and intraperitoneally of gradually increasing doses of specific antigen prepared from donor skin over a 21-day period preceding the homografting. In the second group the animals were desensitized in the same way as those in the first group, but in addition they were given 10 mg. of corticotropin (ACTH) for the first six days following grafting. From the 7th to the 14th days the dose was increased to 30 gm., since most of the graft reaction was expected at that time. Corticotropin was again reduced to 10 mg. on the 15th day and continued until 2 days after slough of the homograft. In the third group the rabbits were given corticotropin alone. The rabbits in the fourth group served as controls; they were not desensitized and did not receive corticotropin therapy. Results showed that the survival time of homografted skin in the rabbits has been prolonged from 7 to 23 days by the use of host "desensitization" with specific donor antigen. Corticotropin did not exert any effect on the survival of skin homografts in rabbits. The role of the immune reaction in the failure of survival of homografted skin was indicated by an increase in eosinophil count with antigen inoculation and anaphylactic shock following intravenous injection of specific antigen after the homografts had sloughed.

Arizona Medicine, Phoenix

9:1-80 (March) 1952

Local and Regional Analgesic Injections in Painful Musculoskeletal Conditions. O. Steinbrocker.—p. 27.
Carcinoma of Lung Associated with Chronic Pulmonary Disease. I. Walzer.—p. 30.
Newer Trends in Ophthalmology. C. W. Weisser.—p. 36.

Delaware State Medical Journal, Wilmington

24:35-58 (Feb.) 1952

Tuberculosis in Small Communities. R. S. Reeves.—p. 35.
Absence of Transfusion Reaction with ACTH and Cortisone: Case Report. R. M. Myerson and A. H. Clagett Jr.—p. 41.
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Oxygen Therapy: Brief Review. K. S. Russell.—p. 44.
Corticotropin and Cortisone Therapy in Dermatology. A. D. King. —p. 49.
Cortisone and Corticotropin in Treatment of Acute Inflammatory Skin Eruptions. M. H. Dorph and L. Katzenstein.—p. 50.
Dermatitis Resulting from Topical Dental Therapy. E. R. Gross.—p. 51.

Diseases of Chest, Chicago

21:123-244 (Feb.) 1952. **Partial Index**

*Terramycin in Treatment of Pulmonary Tuberculosis: Pilot Study. L. M. Pfefer, F. J. Hughes and W. E. Dye.—p. 123.
*Evaluation of Effect of Khellin on Pulmonary Circulation in Man. H. R. Cash and H. A. Zimmerman.—p. 137.
Developmental Origin of Cystic, Bronchiectatic and Emphysematous Changes in Lungs: New Concept. E. Mayer and E. Rappaport.—p. 146.
Long Range Effect of Antibacterial Therapy on Pneumonia, Empyema, Bronchiectasis and Pulmonary Abscess (Analysis of Incidence and Mortality in 74,489 Admissions to Children's Hospital in 20 Years). K. E. Kassowitz and G. H. Muscato Jr.—p. 161.
Anomalies of Pulmonary Veins: Their Surgical Significance. O. C. Brantigan.—p. 174.
Incidence of Tuberculin Reactors in Series of 2,000 Patients Seen in Private Practice of Internal Medicine. J. Bellomo.—p. 179.
Coexistent Bronchogenic Carcinoma and Active Pulmonary Tuberculosis: Report of Five Cases with Autopsy Findings. J. Goldberg, E. R. Figueras and B. Barshay.—p. 184.
Aneurysm of Pulmonary Artery Due to Schistosomiasis. H. A. Zaky. —p. 194.
Treatment of Broncho-Pulmonary Moniliasis by Dye Inhalation. I. Kass, K. T. Sasano and W. S. Klein.—p. 205.
Effect of Mecholyl on Vital Capacity of Patients with Endobronchial Tuberculosis. A. A. Cohen and M. C. D'Amour.—p. 210.
Occurrence of Tubercle Bacilli in Spirometers Used by Patients with Pulmonary Tuberculosis. G. C. Leiner and S. Abramowitz.—p. 222.

Terramycin in Pulmonary Tuberculosis.—To determine the efficacy of terramycin in the treatment of pulmonary tuberculosis, 32 patients with moderately or far advanced disease were treated for 120 days. Twenty were given 7 gm. of terramycin daily, while 12 received 7 gm. of terramycin combined with 2 gm. of streptomycin every third day. Varying degrees of improvement, but no instances of worsening, were noted. Nine of 15 patients treated with terramycin alone still had positive cultures at the end of treatment. Tubercle bacilli isolated from one of these nine patients were resistant to 50 μg of terramycin per cubic centimeter. Positive cultures were obtained from 8 of the 12 patients treated with both streptomycin and terramycin. Tubercle bacilli from all eight patients remained sensitive to both chemotherapeutic agents. In view of previous experience with streptomycin alone or in combination with *p*-aminosalicylic acid daily or intermittently, this would indicate that terramycin has a suppressive effect on development of bacterial resistance to streptomycin when both drugs are given concomitantly. Although gastrointestinal irritation was encountered in almost every instance, it necessitated interruption of treatment in only 2 of the 34 in whom terramycin was started. No other signs of toxicity were observed. Further trials with terramycin in combination with streptomycin appear justified.

Effect of Khellin on Pulmonary Circulation.—It has been claimed that khellin (visammin) is a potent coronary vasodilator, relaxes bronchiolar muscles, and therefore is useful in treatment of angina of effort, bronchial asthma, and chronic cor pulmonale. Cash and Zimmerman attempted to evaluate objectively the effect of khellin on the pulmonary circulation and cardiac output in man by means of cardiac catheterization in five patients with pulmonary hypertension associated with mitral stenosis or chronic pulmonary disease. Intracardiac and femoral arterial pressures were recorded, and cardiac output and stroke volume were determined before and following administration of khellin. Five patients received 200 mg. of khellin intramuscularly, and one of these five was subsequently maintained on khellin orally for six days and recatheterized. No significant alteration from base line studies was noted in pulmonary arterial pressure or in cardiac output. The therapeutic usefulness of khellin in treatment of chronic cor pulmonale and bronchial asthma is doubtful.

J. American Med. Women's Assn., Nashville, Tenn.

7:41-76 (Feb.) 1952

Treatment of Heart Disease: Evaluation of Some Newer Agents. E. E. Kleiber.—p. 41.
*Management of Heart Disease in Pregnancy. M. Butler.—p. 45.
Recent Advances in Cardiovascular Disease. T. McGovern.—p. 47.
Fluid Therapy. E. M. Greisheimer.—p. 54.

Management of Heart Disease in Pregnancy.—During the past 10 years, 893 patients were referred from obstetrical clinics to the cardiac clinic of Woman's Medical College of Pennsylvania. Of these, less than 10% showed evidence of organic heart disease. Most cases of heart disease during pregnancy fall into the rheumatic group. Patients with heart failure should have complete bed rest until compensation is reestablished. A mild upper respiratory or a urinary infection often initiates failure, and this should be dealt with promptly. The obstetrician always keeps a watchful eye on the patient's weight, but, in the presence of failure, salt should be restricted as well as fluids. Many cardiologists recommend a Karrell diet for the first few days of failure. During this period rapid digitalization is indicated, and in the presence of recognizable collections of fluid, diuretics should be prescribed. It is advisable for a patient in whom decompensation develops during pregnancy to remain in the hospital until her delivery, but in the case of a first failure that responds promptly to bed rest, to restriction of salt and fluids, and to digitalis, return home with limited ambulation is not contraindicated if adequate medical supervision is available. As to the conduct of labor, there is general agreement that the second stage should be shortened. Vaginal delivery when practical is preferable to cesarean section, for the mortality rate is higher following section. During the lying-in period early ambulation is discouraged. Patients are advised to resume their usual activities slowly and to return to the cardiac clinic for supervision. Careful supervision of pregnant cardiac patients by the obstetrician and cardiologist has lessened the incidence of cardiac failure and reduced both fetal and maternal mortality.

Journal of Bacteriology, Baltimore

63:151-300 (Feb.) 1952. **Partial Index**

Morphology of Virus of Avian Erythromyeloblastic Leucosis and Comparison with Agent of Newcastle Disease. D. G. Sharp, E. A. Eckert, D. Beard and J. W. Beard.—p. 151.
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Effect of Metallic Ions on Growth and Morphology of Clostridium Perfringens. K. Shankar and R. C. Baid.—p. 279.

Journal Clin. Endocrin. & Metab., Springfield, Ill.

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*Use of ACTH in Management of Generalized Peritonitis: Preliminary Report. L. Boling, J. Newkirk, P. Baxter and others.—p. 184.
*Iodine-Deficient Human Thyroid Gland: Preliminary Report. J. B. Stanbury, G. L. Brownell, D. S. Riggs and others.—p. 191.
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Measurements of Thyroid Epithelium in Glands Prepared for Surgery with Iodothiouracil and with Other Antithyroid Drugs. B. Catz and P. Starr.—p. 228.
Protein-Bound Iodine in Serum of Soldiers and of Eskimos in the Arctic. C. W. Gottschalk and D. S. Riggs.—p. 235.

Corticotropin in Generalized Peritonitis.—Boling and associates studied the effect of corticotropin or cortisone in patients with severe diffuse peritonitis. The first patient so treated, a boy of 2½ years, entered the hospital after 18 hours of vomiting and abdominal pain. He was extremely toxic and had a rigid abdomen, with complete absence of peristalsis. This condition persisted for 24 hours despite administration of aureomycin and streptomycin. During the second hospital day, 25 mg. of corticotropin was administered intramuscularly every six hours. After the first 24 hours of corticotropin therapy, he was completely free of complaints, and had active peristalsis and a normal stool. Corticotropin and antibiotics were continued for three days, but during the following 16 hours corticotropin (through an oversight) was omitted. The temperature rose, and the patient again had signs of toxicity, a tender abdomen, and no peristalsis. Resumption of corticotropin for two days again caused disappearance of all clinical symptoms. Because of fear of masking symptoms, corticotropin was discontinued and the boy was treated with the Ochsner type of regimen, and was operated upon on the 20th hospital day. An adherent indurated lower abdominal mass was found in association with abscess formation. After a febrile course of approximately a week, the patient improved and was discharged 38 days after entry. Observations on this patient suggested that chemotherapy combined with corticotropin and cortisone therapy might result in control of toxicity and hence permit early operation and rapid convalescence in peritonitis. Six patients have been treated in this fashion, and all showed prompt improvement. The observations suggest that the use of corticotropin or cortisone, in conjunction with chemotherapy, will be of value in the preoperative and postoperative management of patients with generalized peritonitis. It should be remembered, however, that these agents may completely mask advancing pathological conditions and that they exert no inhibitory effect on pathogenic organisms.

The Iodine Deficient Human Thyroid Gland.—Radioiodine was used in the study of endemic (iodine-deficient) human goiter in the hope that such a gland, working in precarious equilibrium with the iodine supply, might allow measurements that would permit more precise definition of thyroid dynamics than does the semidormant gland abundantly supplied with iodide. This study was carried out in Mendoza, Argentina, an area long-recognized for intense goiter endemicity. Most of the subjects were below the age of 35 and had diffusely enlarged thyroid glands; a few had multinodular glands. Some patients below the age of 15 had huge multinodular glands. Single nodules were rare, although in some patients one nodule would be considerably larger than the rest. Gland weights were estimated to vary from 40 to 250 gm. and occasionally more. The authors found that the iodine-deficient thyroid gland is characterized by its avidity for iodide. In a series of 118 clinically euthyroid patients in an area of iodine deficiency, a wide variation in I^{131} uptake was found, but many values were over 60% of the administered dose within 48 hours. A relationship was observed between the daily excretion of I^{127} and I^{131} accumulation. The rate of accumulation of I^{131} in the thyroid glands of iodine-deficient patients was rapid, and the apparent rate of release was slow. When an effective thyroid-blocking drug was given, however, the slope of the retention curve of labeled iodine became much greater, indicating a rapid rate of turnover for the I^{131}. There was a further increase in rate of iodine release when thyrotropin was given. This change indicated that these thyroid glands were not under maximal stimulation from endogenous thyrotropin. Daily dietary supplements of I^{127} were remarkably ineffective in reducing the I^{131} accumulation, but exogenous thyroid depressed the uptake in most of the patients to whom it was given.

Journal of Gerontology, St. Louis

7:1-160 (Jan.) 1952. **Partial Index**

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Journal of Investigative Dermatology, Baltimore

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Roniacol Tartrate in Treatment of Dermatitis Herpetiformis. O. S. Philpott, A. R. Woodburne and J. A. Philpott Jr.—p. 87.

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Inhibition of Melanin Formation by Chemical Agents. C. R. Denton, A. B. Lerner and T. B. Fitzpatrick.—p. 119.

*Repository Penicillin Therapy of Pinta in the Mexican Peasant: Clinical and Serologic Survey. C. R. Rein, D. K. Kitchen, F. Marquez and G. Verala.—p. 137.

Histologic Variations in Structure of Human Eccrine Sweat Glands. J. B. Holyoke and W. C. Lobitz Jr.—p. 147.

Repository Penicillin Therapy in Pinta.—Pinta, or mal del pinto, is a nonvenereal treponematosis. It is a tropical disease that is prevalent in the western hemisphere, Mexico alone having more than 250,000 cases. The present report deals with the evaluation of the clinical and serologic results in a series of 665 Mexican Indian peasants with pinta. They were treated with microcrystalline procaine penicillin G in oil with aluminum monostearate (PAM). Blood specimens were collected from each patient for serologic examinations prior to treatment. Clinical and serologic reexamination was possible in 350 of them, at varying intervals up to two years following completion of therapy. The clinical results with penicillin therapy were exceptionally good and far superior to those of any other form of therapy ever employed, including heavy metals, aureomycin, chloramphenicol (chloromycetin®) and streptomycin. Serologic results are also presented. An effective, ambulatory, single injection schedule has been established. Eradication of this disfiguring and stigmatizing disease may now be possible.

Journal Lab. and Clinical Medicine, St. Louis

39:169-336 (Feb.) 1952

Factors Effecting X-Ray Inhibition of Antibody Formation. L. O. Jacobson and M. J. Robson.—p. 169.

*Effects of Intravenous Fat Emulsions on Human Subjects. W. A. Johnson, S. Freeman and K. A. Meyer.—p. 176.

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Electrophoretic Analysis of Serum in Case of Multiple Myeloma Associated with Amyloidosis. U. J. P. Hoessly and L. D. Greenberg. —p. 193.

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Effects of Cortisone on Bacterial Infection: Group A Hemolytic Streptococcal Infection in Rabbits. W. J. Mogabgab and L. Thomas.—p. 271.

Sensitivity Studies on Human Pleuropneumonia-Like Organisms. L. B. Robinson, R. H. Wichelhausen and T. McP. Brown.—p. 290.

Intravenous Injection of Fat Emulsions in Man.—Of four 10% fat emulsions prepared from olive oil and 5% dextrose in distilled water with various emulsifying agents, two emulsions prepared with 1% cerebrosides and 1% lecithin fraction as the respective emulsifying agent were tested clinically in 79 patients from the general medical and surgical wards. The two other emulsions were discarded after preliminary tests on human subjects indicated that one solution produced a phlebitis, while the other caused inflammation whenever the solution entered the subcutaneous tissue. Results of parenteral fat injections in the 79 patients showed that a single infusion of a 10% fat emulsion (1 gm. of fat per kilogram of body weight) in a four hour period did not cause serious complication, but was accompanied by some reactions, such as rise of temperature in one-third of the patients, sometimes accompanied by anorexia, nausea, vomiting, diarrhea, and headache. Lumbosacral pain, a feeling of substernal constriction, shortness of breath, cough, and urticaria occurred in a few patients. Daily injections of a 10% fat emulsion (1 gm. of fat per kilogram of body weight) for 24 days in two patients produced no evidence of toxicity. Daily injections of 20% fat emulsions (3 to 4 gm. of fat per kilogram body weight) given from 1 to 11 days to four patients were associated with a decreased platelet count and prolonged bleeding time.

Journal-Lancet, Minneapolis

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Pain as Psychiatric Problem. L. C. Kolb.—p. 50.

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Journal of Nervous and Mental Diseases, New York

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Electroencephalographic Support for Genetically Oriented Organic Concept of Schizophrenia. L. A. Hurst.—p. 95.

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Journal of Thoracic Surgery, St. Louis

23:111-218 (Feb.) 1952

*Open Pneumonolysis—Its Value and Limitations: Review of 36 Operated Cases. T. Bruce and C. Crafoord.—p. 111.

*Pulmonary Decortication in Tuberculosis: Report of 22 Cases. J. J. Quinlan, V. D. Schaffner and J. E. Hiltz.—p. 125.

Unusual Sternal Deformity with Cardiac Symptoms—Operative Correction. M. M. Ravitch.—p. 138.

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Single Left Superior Vena Cava, with Aortic Coarctation, in an Adult: Case Report. F. N. Brown.—p. 160.

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Bronchial Obstruction with Chronic Atelectasis and Pneumonitis Due to Hilar Lymphadenitis After Lobectomy and Lingulectomy: Case Report. J. Y. Templeton III.—p. 169.

Retinal Ischemia with Unilateral Blindness—Complication Occurring During Pulmonary Resection in Prone Position: Report of Two Cases. H. E. Walkup and J. D. Murphy.—p. 174.

Combined Streptomycin and Tuberculin Therapy in Experimental Tuberculosis. H. C. Ballon; A. Guernon and M. A. Simon.—p. 176.

Simple Cardiac Defibrillator. G. L. Birnbaum.—p. 183.

Surgical Treatment of Multiple Arteriovenous Fistulas in Right Lung in a Patient Having Undergone Left Pneumonectomy Seven Years Earlier for Same Disease. B. C. Charbon, W. E. Adams and R. F. Carlson. —p. 188.

Useful Bronchial Clamp. W. J. Burdette.—p. 197.

Gangrene of Arm Following Use of Subclavian Artery in Pulmonosystemic (Blalock) Anastomosis. W. R. Webb and T. H. Burford.—p. 199.

Fibroma of Lung: Case Report. P. D. Crimm and F. L. Kiechle.—p. 205.

Open Pneumonolysis.—Although open intrapleural pneumonolysis was performed as early as 1908, only 100 open, as compared to 5,000 closed pneumonolyses, were performed before 1938. Swedish surgeons gave their attention again to this method in the early 1940's, and in this report they describe their experiences with this technique in 36 cases. Open intrapleural pneumonolysis was decided on either because closed division of adhesions seemed inadvisable or because artificial pneumothorax would otherwise have to be terminated in favor of thoracoplasty or, in a few instances, extrapleural pneumothorax. The operation was carried out because of a cord-type of adhesion or because of fusion of the visceral and parietal pleuras. On the basis of the results they obtained, the authors conclude that in the short, cord-type of adhesions, in which closed pneumonolysis involves risk of pulmonary trauma or hemorrhage, open pneumonolysis is advisable. In fusion of the visceral and parietal pleuras, the value of open pneumonolysis is considerably more limited, owing to: (1) the risk of pulmonary trauma during, and hemorrhage following, the operation; (2) pleural complications, particularly empyema, with their sequelae of pleural thickening, fixation of the diaphragm, and pulmonary inexpansibility. Thoracoplasty, which is usually the alternative measure, is less hazardous, and as cavity closure is generally obtained by both methods, thoracoplasty is preferable in most cases. Apart from certain exceptional cases, open pneumonolysis of pleural fusion should be employed only when alternative collapse measures would have to be so extensive that the function of the diseased lung will be greatly reduced, or possibly lost.

Pulmonary Decortication in Tuberculosis.—Pulmonary decortication involves peeling from the surface of the pleura abnormal fibrinous layers that have formed over it and prevented reexpansion of the lung. Quinlan and associates performed pulmonary decortication in one patient with unexpandable lung and no infection, in seven patients during pulmonary resection, and in 14 with tuberculous empyema. In 11 of the 14 empyema cases there was complete obliteration of the pleural space; in one the space, while becoming smaller, did not completely obliterate; and in two there was no decrease in the size of the empyema cavity without the assistance of further surgery. Although their experience is limited, the authors are favorably impressed with the results of pulmonary decortication, especially in tuberculous empyema. The so-called unexpandable lung without empyema seems particularly suited to this operation, as in these cases the peel is usually thin and very loosely attached. In resection, the decortication procedure renders unnecessary thoracoplasty or other collapse procedure to obliterate a space. Pneumonectomies that were once thought impossible are now greatly simplified by the finding of the cleavage plane between the visceral peel and the visceral pleura.

Kentucky State Medical Assn. Journal, Bowling Green

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Daniel Drake and His Medical Classic. E. F. Horine.—p. 68.
Medical Relationships in Industrial Health. J. F. McCahan.—p. 79.

Minnesota Medicine, St. Paul

35:97-184 (Feb.) 1952

Some Observations on Recognition and Treatment of Commoner Forms of Hepatic Cirrhosis. C. J. Watson.—p. 125.
Rehabilitation of the Hemiplegic Patient. J. R. Brown.—p. 136.
Positive Findings in Functional Neuropsychiatric Disorders. G. R. Kamman.—p. 141.
Hemorrhage in Rectus Muscle. H. H. Joffe and D. J. Van Ryzin.—p. 144.
Lumbo-Dorsal Fascia and Chronic Backache. R. J. Dittrich.—p. 147.
Minnesota Program for Control of Brucellosis. R. L. West.—p. 152.

Missouri State Medical Assn. Journal, St. Louis

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SYMPOSIUM ON POLIOMYELITIS

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Special Care for Patient with Bulbar Poliomyelitis. F. J. Kottke. —p. 222.
Certain Procedures for Surgical Rehabilitation of Hand in Poliomyelitis. T. Gucker 3rd.—p. 227.
Differential Diagnosis of Polioencephalomyelitis. D. L. Thurston. —p. 230.

New England Journal of Medicine, Boston

246:243-280 (Feb. 14) 1952

Surgery of Advanced Pelvic Cancer in Women. H. Ulfelder and J. V. Meigs.—p. 243.
Effects of ACTH and of Cortisone on Platelets in Idiopathic Thrombopenic Purpura. B. M. Jacobson and W. D. Sohier.—p. 247.
Solitary Jejunal Metastasis 20 Years After Removal of Renal-Cell Carcinoma: Report of Case. A. Starr and G. M. Miller.—p. 250.
Tissue Necrosis Following Subcutaneous Infiltration with Nor-Epinephrine: Report of Two Cases. H. P. Greenwald, A. Gootnick, N. M. Luger and J. A. King.—p. 252.
Digitalis Poisoning and Its Treatment. B. M. Cohen.—p. 254.
Medical Writing as Observed by a Reader. R. I. Lee.—p. 260.

New York State Journal of Medicine, New York

52:385-512 (Feb. 15) 1952

*Thiouracil Drugs in Treatment of Chronic Ulcerative Colitis. R. A. Herfort and H. H. Livingston.—p. 431.
Effect of Khellin in Coronary Artery Insufficiency as Evaluated by Electrocardiographic Tests. H. I. Russek, F. D. Regan, W. H. Anderson and others.—p. 437.
Roentgen Diagnosis of Spontaneous Internal Biliary Fistula. S. B. Clark. —p. 443.
Current Trends in Treatment of Pulmonary Tuberculosis. E. Mayer. —p. 447.
Studies to Determine Whether Mongolian Idiots Can Be Sufficiently Trained to Take Part in Society. H. Morelewicz, J. Swierat and J. Bembenista.—p. 451.
Torsion of Ovarian Neoplasms. G. Schaefer, E. C. Veprovsky and F. Carpenter.—p. 454.
Possible Relationship of Lipids in Liver and Bone Marrow: Preliminary Report. M. Texon and L. J. Goldwater.—p. 458.
Specific Method of Spinal Anesthesia for Culdoscopic Examination. B. A. Greene and A. Biezunski.—p. 461.
Cancer Death Rates, Topography, and Terrestrial Radiation. J. Meyers and V. F. Hess.—p. 463.

Thiouracil in Chronic Ulcerative Colitis.—Thiouracil compounds have been used in patients with chronic ulcerative colitis because of the chemical similarity of the thiouracils to the synthetic 5-methyl uracil that Spies and his co-workers found effective in treatment of the diarrhea and anemia of tropical sprue. In this paper Herfort and Livingston report on 15 patients with ulcerative colitis, 8 of whom were treated with thiouracil and 7 with propylthiouracil. Thiouracil was administered orally in doses of 200 mg. three times daily. Propylthiouracil was taken in doses of 100 mg. three times daily. The duration of treatment varied, but all patients were treated for at least three months. These drugs had a beneficial effect as evidenced by subsidence of diarrhea with consequent weight gain, improvement of the secondary anemia, and healing of the mucosal lesions as observed through the proctosigmoidoscope. The response of these 15 patients suggests that the thiouracil compounds may be of benefit in treatment of chronic ulcerative colitis. However, it should be emphasized that assay of any treatment is difficult in this disease, as patients suffering from it are notoriously suggestible. A possible explanation for the action of thiouracil in this disease was offered by Ellis and Root, who noted that the serum and homogenized liver of rats given thiouracil possessed cholinesterase activities twice those of the control animals. Thiouracil by increasing serum cholinesterase activity inhibits the effect of acetylcholine, which is regarded as the chemical mediator of the parasympathetic nervous system. As a consequence, thiouracil would depress the vagal activity, a factor in chronic ulcerative colitis.

Pediatrics, Springfield, Ill.

9:141-262 (Feb.) 1952

Some Aspects of Chemical Composition, Physiology and Pathology of Intracellular Fluid. W. M. Wallace.—p. 141.
Anomalies of Pulmonary Veins and Their Surgical Significance: Report of Three Cases of Total Anomalous Pulmonary Venous Return. H. G. Parsons, A. Purdy and B. Jessup.—p. 152.
Paroxysmal Tachycardia in Infants and Children: Study of 41 Cases. A. S. Nadas, C. W. Daeschner, A. Roth and S. L. Blumenthal.—p. 167.
Coagulation Studies in the Newborn Infant: I. Normal Infants. B. J. Grossman, R. M. Heyn and I. H. Rozenfeld.—p. 182.
Brain Abscess Associated with Congenital Heart Disease. R. Gluck, J. W. Hall and L. D. Stevenson.—p. 192.
Hypotonic Cerebral Palsy in Mental Defectives. H. Yannet and F. Horton.—p. 204.
Further Studies on Influence of Histamine on Platelet Activity, with Especial Reference to Its Action on Blood of Hemophiliac Patient. H. N. Sanford, F. R. Hall and S. Butler.—p. 212.
Localized Hypertrophic Emphysema. R. R. Shaw.—p. 220.

Physiological Reviews, Baltimore

32:1-122 (Jan.) 1952

Intrapulmonary Distribution of Inspired Gas. W. S. Fowler.—p. 1.
'Paralytic Secretion' of Saliva: Example of Supersensitivity After Denervation. N. Emmelin.—p. 21.
Histamine in Blood. C. F. Code.—p. 47.
Cobalt, Copper and Molybdenum in Nutrition of Animals and Plants. H. R. Marston.—p. 66.

Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

79:199-338 (Feb.) 1952. Partial Index

*Effect of BAL on Survival of Rats After Lethal Doses of Polonium. J. B. Hursh.—p. 210.
In Vitro Effect of Aureomycin, Terramycin, and Chloramphenicol on Typhus Rickettsiae. A. Karp and J. C. Snyder.—p. 216.
Rapid Determination of Plasma Tocopherols. M. Farber, A. T. Milhoart and H. Rosenkrantz.—p. 225.
Proteinuria in Experimental Renal Hypertension. L. J. Rather.—p. 244.
Cytologic Changes in Rat Adenohypophysis Following Administration of Adrenocorticotrophin or Cortisone. A. Golden and P. K. Bondy.—p. 252.
Uptake of Radioactive Vitamin B_{12} by Various Microorganisms. R. L. Davis, L. L. Layton and B. F. Chow.—p. 273.
Influence of Diet on Stability of Rat Erythrocytes. J. W. Harman.—p. 301.
Effect of Steroids upon Resistance of Skin to Intracutaneous Injection. C. A. Winter and L. Flataker.—p. 312.
Serological Analysis of Components in Hemopoietic Tissue. B. Björklund.—p. 324.

Effect of Dimercaprol After Lethal Doses of Polonium.—Since earlier experiments had demonstrated that dimercaprol (BAL) administered intramuscularly after single intravenous doses of polonium doubles the 10 day total excretion and brings about a shift of polonium from the bone marrow, spleen, and testis into muscle tissue, it was believed that dimercaprol would significantly modify the toxicity of polonium. Experiments that were performed to test that belief are described in this report. Control rats injected with a lethal dose of polonium (36 μc per kilogram of body weight) had a median survival time of 22 days, whereas the dimercaprol-treated group had a median survival time of 89 days. Blood studies of control rats showed the typical picture of hemopoietic failure in contrast with well sustained cell and platelet levels found in the dimercaprol-treated group. The difference is believed to be due to a reduced radiation exposure of the spleen and marrow caused by the action of dimercaprol in accelerating excretion and in diverting polonium from the hemopoietic organs into muscle.

Proc. Staff Meet. Mayo Clinic, Rochester, Minn.

27:89-104 (Feb. 27) 1952

*Aureomycin Calcium Caseinate: New Preparation Associated with Low Incidence of Nausea and Vomiting. P. R. Manning and W. E. Wellman.—p. 89.
Importance of Attention to Potassium Disturbances in Surgical Patients. W. P. L. Myers and J. W. Kirklin.—p. 94.
Wolff-Parkinson-White Syndrome Associated with Situs Inversus: Report of Case Simulating Myocardial Infarction Electrocardiographically. L. G. Bartholomew and H. B. Burchell.—p. 98.

Prevention of Nausea and Vomiting in Aureomycin Therapy.—Aureomycin and terramycin frequently cause anorexia, nausea, and vomiting when they are administered orally. Numerous studies have shown that these symptoms can be eliminated or greatly reduced by simultaneous administration of various antacids. However, since the simultaneous ingestion of different capsules, tablets, and liquid medicaments may prove confusing and troublesome to some patients, a single tablet or capsule that contained both the antibiotic and antacid would be desirable. Manning and Wellman employed tablets containing the following ingredients: aureomycin calcium caseinate, 125 mg., calcium caseinate, 200 mg., and calcium carbonate, 50 mg. Aureomycin blood levels after oral administration of aureomycin calcium caseinate are comparable to those obtained with regular aureomycin. In a group of 24 patients treated with aureomycin calcium caseinate, 20 experienced no anorexia, nausea or vomiting, 1 patient noticed anorexia, 2 patients had nausea, and 1 patient suffered from both nausea and vomiting. Of a group of six patients who had previously experienced nausea and vomiting while taking regular aureomycin, five were completely free of these symptoms when aureomycin calcium caseinate was used. One patient noticed no benefit on being changed to aureomycin calcium caseinate. A seventh patient who noticed only nausea with regular aureomycin felt considerable but not complete relief when aureomycin calcium caseinate was substituted. Aureomycin calcium caseinate was given also to three patients who were unable to take terramycin because of nausea and vomiting. This substitution gave complete relief.

Public Health Reports, Washington, D. C.

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Research in Epidemiology of Mental Illness. R. H. Felix and M. Kramer.—p. 152.
Research for Improved Nursing Practices. L. Petry, M. Arnstein and P. McIver.—p. 183.
Tuberculosis Case-Finding Survey Program of the Veterans Administration. L. V. Schneider and M. Robins.—p. 189.
Terramycin for Nongonococcic Urethritis and Reiter's Disease. R. R. Willcox and G. M. Findlay.—p. 196.

Radiology, Syracuse, N. Y.

58:161-324 (Feb.) 1952. Partial Index

Studies on Value of Serial Films in Estimating Progress of Pulmonary Disease. L. H. Garland, E. R. Miller, H. B. Zwerling and others.—p. 161.
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Methocel-Diodrast: Viscous Water-Soluble Contrast Medium for Bronchography: Roentgen and Clinical Results in 23 Cases. E. Salzman, M. E. Peck and A. J. Neerken.—p. 209.
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Clinical Experience with Telepaque, New Gallbladder Compound. R. H. Morgan and H. B. Stewart.—p. 231.
Lithopedion: Case Report and Survey. S. D. Hemley and A. Schwinger.—p. 235.
Comparative Study of X-Ray Transmission in Thorax and Abdomen in Living Subjects. J. R. Nahon and C. P. Naidorf.—p. 241.
*Relationship Between Adrenal Cortex and Radiation Sickness: Review of Literature and Presentation of New Data. E. C. Porter.—p. 246.

The Adrenal Cortex and Radiation Sickness.—In this paper Porter presents new evidence that the adrenals are involved in radiation sickness. This evidence was gained from studies on 36 patients undergoing radiation therapy for such conditions as Hodgkin's disease, polycythemia vera, myasthenia gravis, myelogenous leukemia, malignant melanoma, sarcoma, and carcinoma. Treatment was carried out with a variety of techniques. Eosinophil counts were performed daily or, when this was impossible, at frequent intervals before, during, and after the treatment period. On only five patients were 17-ketosteroid urinary levels obtained. All of the patients in whom a significant depression of the eosinophil count occurred in the course of treatment suffered from some form of radiation sickness. Twenty-six patients showed no significant depression of the eosinophil count. Four of these patients, however, started therapy with abnormally low counts. In three of these radiation sickness developed immediately after the first treatment, and in two it was severe. In the fourth patient it was necessary to stop treatment because of the sickness. Thus the development of radiation sickness may be predicted if eosinopenia exists prior to irradiation. Of the 22 patients who did not show a significant depression of the eosinophil count during therapy, none showed evidence of vomiting, only 4 were nauseated. It is believed that the adrenal response is a major factor in alleviating radiation sickness, and the author suggests that the evaluation of treatments for irradiation sickness may have to be revised, in that the patient may be "treating" himself through the mechanism of his own adrenal cortical response. This phenomenon may explain many of the "good responses" to medication described in the literature.

Rhode Island Medical Journal, Providence

35:1-64 (Jan.) 1952

Who Sees the Psychiatrist? L. A. Senseman.—p. 17.
Gastric Ulcer and Gastric Carcinoma: Review of Experience at the Providence Veterans Hospital. P. Cooper and T. F. FitzGerald.—p. 20.
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35:65-120 (Feb.) 1952

Diathermy Regulations. C. P. Williamson.—p. 70.
Nephrosis—Long Remission After ACTH. H. Hecker and R. E. Stevens.—p. 81.
Dermatoses of Newborn. A. B. Kern.—p. 85.

Surgery, Gynecology and Obstetrics, Chicago

94:129-256 (Feb.) 1952

Experimental Study of Aortic Valve Homografts. C. R. Lam, H. H. Aram and E. R. Munnell.—p. 129.
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*Relationship Between Biliary Tract and Coronary Artery Disease. M. B. Walters and A. M. Master.—p. 152.
Dumbbell (Hourglass) Neurofibromas Affecting Spinal Cord. J. G. Love and H. W. Dodge Jr.—p. 161.
*Cancer Mortality: Failure of Control Through Case-Finding Programs. (Summary). N. E. McKinnon.—p. 173.
*Treatment of Urinary Stress Incontinence: With Results in 117 Patients Treated by Active Excercise of Pubococcygei. E. G. Jones and A. H. Kegel.—p. 179.
Kuntscher Nail in Treatment of Fractures of Tibia and Fibula. J. E. M. Thomson.—p. 189.
Adenomatous Polyps of Colon and Rectum: Challenge in Cancer Prophylaxis. W. E. DeMuth Jr., P. J. Cherney and W. T. Fitts Jr.—p. 195.
Employment of Beaded Wires in Fractures of Forearm. E. H. White.—p. 201.
Experimental Studies on Reversal of Circulation in Lower Extremity. T. H. Palmer and C. S. Welch.—p. 206.
Studies on Bone Marrow Cavity of Dog: Fat Embolism and Marrow Pressure. E. D. Bloomenthal, W. H. Olson and H. Necheles.—p. 215.
Clinical Study of Ligation on Inferior Mesenteric Artery in Left Colon Resection. G. W. Ault, A. F. Castro and R. S. Smith.—p. 223.
Splenectomy for Fulminating Episode of Essential Thrombocytopenic Purpura. A. P. Giannini.—p. 229.
Acute Appendicitis in Aged. W. I. Wolff and R. Hindman.—p. 239.

Relation Between Biliary Tract and Coronary Artery Disease.—Reports on the frequency with which myocardial disorders, particularly "anginoid pains," are associated with gallbladder disease induced Walters and Master to attempt to clarify the relationship of biliary disease and cardiac symptoms and signs. They made a thorough study of 45 patients who had roentgenographic or surgical evidence of gallbladder disease. Of the 17 patients who had acute gallbladder disease, 9 had a normal and 8 an abnormal electrocardiogram. Of the 28 patients with chronic gallbladder disease, 10 had cardiovascular symptoms in the form of angina pectoris and 18 were free of such symptoms. Since gallbladder and coronary artery disease are frequently associated, and since the symptoms of one may simulate those of the other, it is important to differentiate the two conditions. The differential diagnosis is aided by careful history taking and by the two step exercise test, which may provide objective evidence of coronary insufficiency when the resting 12 lead electrocardiogram indicates normal function. An acute gallbladder attack may, through a vasovagal reflex, precipitate acute coronary insufficiency in patients who have preexisting coronary artery disease. The cardiac disorder may improve after cholecystitis or cholelithiasis has been counteracted by cholecystectomy. The acute anginal pain and the other cardiac symptoms may disappear, as well as the abnormal electrocardiographic changes. The underlying disease of the coronary arteries, however, is not affected by such surgical procedures. Since gallbladder disease and disease of the coronary arteries occur in the same age group and since both may have a common etiologic basis, their frequent association is probably coincidental.

Cancer Mortality: Failure of Case-Finding Programs.—Cancer case-finding programs were organized for the purpose of reducing cancer mortality and a wide variety of programs have provided controlled observations over 20 to 30 years. Breast cancer mortality has not declined or changed its trends regardless of the presence or absence of case-finding programs. Evidence accepted as supporting the value of early treatment made no allowance for different lethal types and for inability to differentiate between those types. Further, as staging is more a classification of type than of time and stage 1 includes cases of short and long duration, results in stage 1 cases are not evidence of results of early treatment. Evidence from analysis of cases indicates that the type of breast cancer rather than the duration of growth or the treatment determines the outcome. These findings relative to breast cancer also apply to other metastasizing cancers. In those that, untreated, usually cause death by local extension before remote metastases occur, treatment can prolong life; in nonmetastasizing cancer (indistinguishable morphologically from metastasizing cancer) treatment can cure, but in both these forms of cancer, treatment within a reasonable time after the first indications of a lesion gives almost the same results as earlier treatment. Any attempt to reach these cancers in a preclinical state carries with it limitations in diagnosis, a potentiality for much harm, and but little good; moreover, nonmetastasizing cancer contributes only a small part of cancer mortality. For the vast majority of cancer deaths, the high hopes of control have not been realized. The failure of early treatment to reduce mortality shows that remote metastases occur before interference is possible. Case-finding and control programs have not accomplished and cannot accomplish the purpose for which they were established. If they are to be continued, they should be changed to agencies for the study of cancer in the field and for providing care rather than promising cure.

Exercise of Pubococcygei in Treatment of Urinary Stress Incontinence.—Operative correction of incontinence has been based on the concept that most patients with stress incontinence have an injury to the supporting fascia planes or tissues of the anterior vagina. The fact that surgical correction still results in 20% failure is an indication that this concept is inadequate. The physiological feat of exercising the pubococcygeus muscle to overcome incontinence was first described by Kegel in 1948. He employed a purely physiological mechanism to improve the tone of the urethra by increasing the strength of the periurethral fibers. This adds an entirely new method of improving urinary control, which may be used to complement surgery or be used entirely independent of surgery. In this paper Jones and Kegel show the logic of this treatment, which they used in 117 patients with stress incontinence. Good results were obtained in 81 patients (69%). There were 37 patients who continued to be incontinent despite previous surgery on the anterior vagina. A good result was obtained by exercise in 27. Thirty-four patients with "cystocele" and 14 with "urethrocele" were followed for at least two months, unless an excellent result was obtained sooner. Good results with exercise alone were obtained in 85% and 93% of these respective groups demonstrating that bladder and urethral position alone were not major factors in the maintenance of continence, as these remained unchanged after continence was regained. These results demonstrate the importance of active exercise of the pubococcygeus muscle in restoration and maintenance of continence. Techniques of examination are described that will separate more accurately the patient who definitely requires surgery from the patient who can be cured by exercise alone. Only when there is extreme damage to the intrinsic muscle of the urethra or of the nerves of the urethra will exercise of the pubococcygeus or plication operations not be of benefit.

Texas State Journal of Medicine, Fort Worth

48:61-116 (Feb.) 1952

Menstrual Disorders: I. During Adolescence. R. G. Swearingen.—p. 65.
Id.: II. During Childbearing Period. F. A. Snidow.—p. 69.
Id.: III. Abnormal Uterine Bleeding During and After Climacteric. W. R. Cooke.—p. 71.
Obstetric Complications: I. Bleeding During Last Trimester of Pregnancy. W. F. Mengert.—p. 76.
Id.: II. Pregnancy Toxemia with Emphasis on Treatment. H. W. Johnson.—p. 80.
Id.: III. Treatment of Common Postpartum Complications. G. H. Petta and D. M. Voulgaris.—p. 84.
Transverse Abdominal Incision in Pelvic Surgery. J. J. Delany and W. W. Stephen.—p. 88.

FOREIGN

Acta Haematologica, Basel

7:65-128 (Feb.) 1952. Partial Index

*Clinical and Hematological Aspects of Malignant Reticulosis. P. Cazal.—p. 65.
Cells of Hematopoietic Mesenchyma in Peripheral Blood (Mesenchymal Reactions). A. Hittmair.—p. 86.
Effect of Rutin on Experimental Thrombocytopenic Purpura in Rats. S. Witte and K. Wilmes.—p. 89.
Suggestions for Counts of So-Called Erythrocytes with Vital Granulation (Reticulocytes). R. Gross and B. Schwarzkopf.—p. 106.

Malignant Reticulosis.—Malignant reticulosis is characterized by an invasive, irreversible, atypical, and systemic proliferation of reticulohistiocytic cells. According to the localization of this proliferation, it is possible to distinguish three clinical forms: (1) the visceral or pseudoleukemic forms, with involvement of the hematopoietic organs (the spleen, the liver, and the lymph nodes); the dermatological forms, with initial and predominant involvement of the skin; and a form with which young children are affected, known among American pediatricians as Abt-Letterer-Siwe disease. Asthenia, loss of weight, and anemia are the most frequent general manifestations. As a rule there is moderate intermittent elevation of temperature not exceeding 101.4 F, with daily recurring rises in the terminal stage. A hemorrhagic syndrome characterized by purpura, bleeding of gums and tongue, and occasionally epistaxis is observed in one-fourth of the cases. In the final stage cachectic or compression edema of the lower extremities and abdomen may be manifested. The disease is always fatal. An acute form resulting in death in less than six weeks occurs in about one-fourth of the cases, while the subacute or chronic forms are more frequent and characterized by exacerbations and remissions. The hematological aspects of malignant reticulosis are as polymorphous as its clinical aspects. Three forms may be distinguished as follows: with the first there are a somewhat normal or reduced ratio of leukocytes and occasional nonspecific blood disturbances; with the second a moderate leukocyte ratio and the appearance of atypical monocytes (so-called paramonocytes); and with the third a monocytic leukemia of Schilling type, with "blastoid cells" appearing side by side with atypical monocytes. Malignant reticulosis must be differentiated from monocytic leukemias of the Naegeli or Marshal types, malignant lymphogranulomatosis, mycosis fungoides, eosinophilic granuloma, xanthomatosis, and reticulosarcoma.

Acta Orthopaedica Scandinavica, Copenhagen

21:155-242 (No. 3) 1951. Partial Index

*Resection of Knee-Joint in Tuberculosis: Re-Examination of 369 Cases. H. Brodin.—p. 155.
*Radical Treatment of Bone and Joint Tuberculosis, Introduction. S. Orell.—p. 187.
Chemotherapy and Surgical Treatment in Bone and Joint Tuberculosis. S. Orell.—p. 190.
Combined Surgical and Chemo-Therapy of Abscesses in Bone and Joint Tuberculosis, Early Results. P. Östman.—p. 204.
Surgical Intervention on Paravertebral Tuberculous Abscesses. C. Hirsch.—p. 211.

Resection of Knee Joint in Tuberculosis.—Results obtained by surgical therapy in tuberculosis of the knee joint before the advent of chemotherapy and antibiotics were studied in a series of 369 cases. Indications for surgical intervention were wide, except among children, who were seldom operated on. The joint was opened, total synovectomy performed, and abscesses either curetted and cauterized with phenol and alcohol or extirpated. The articular cartilage and a thin layer of the bone lamellae were removed from every articular surface and any persistent foci curetted; then the ends of the bones were set in place and the knee was fixed usually in a 5 degree flexion and 0-5 degree valgus position. The period of postoperative bed rest ranged from 1 to 11 weeks in cases without complications; as much as 96 weeks was required in some cases. Complications were more frequent when there were multiple tuberculosis, tuberculous abscesses in the knee joint, and an increased erythrocyte sedimentation rate before the operation. Preoperative fistula and existence of the illness for less than two years before operation apparently increased the risk of complications; advanced age, extensive roentgenological changes, and shortness of preoperative treatment had no obvious effect on the incidence of complications. Two deaths are known to have occurred as a direct result of the operation, one as the result of meningitis three months after the operation. Eleven patients died more than three months postoperatively while still hospitalized. The mortality after leaving the hospital was greater among patients with multiple tuberculosis, especially when foci were found in the lungs, than among those in whom the knee alone was involved. Working capacity was ultimately recovered by 96% of the patients who were otherwise capable of working; 84% returned to work within two years. Ankylosis occurred in from 2 to 21 months; most patients were able to walk without difficulty. Stiffness of the knee apparently does not necessarily influence working capacity or the manner of living.

Radical Treatment of Bone and Joint Tuberculosis.—A method of treatment of bone and joint tuberculosis, using *p*-aminosalicylic acid as the basic medication and streptomycin for general and local protection in connection with operative intervention, has been developed at St. Görans Sjukhus in Stockholm. Operation has been performed for radical elimination of bone foci, evacuation of cold abscesses, and stabilization in cases with slight bone changes and no pronounced abscesses. Results so far indicate that chemotherapy and antibiotics increase the possibilities of healing following radical operative treatment of the bone foci; that primary healing of abscesses in bone and joint tuberculosis usually takes place; and that drainage of the abscesses results in improvement of the general condition. The danger that operative measures will spread and activate the tuberculosis is slight if the courses of streptomycin are as short as 14 days; in such cases, bacterial resistance does not develop and toxic complications are minimal. Additional advantages of this method are shortening of the period of treatment and restoration of joint mobility.

British Journal of Cancer, London

5:375-460 (Dec.) 1951

Distinctive Features of Tumours of Salivary Glands in Malaya. A. T. H. Marsden.—p. 375.
Carcinoma and Asbestosis of Lung: Report of Case. T. K. Owen.—p. 382.
Evaluation of some Biochemical Tests for Cancer. P. M. G. Broughton, G. Higgins and J. R. P. O'Brien.—p. 384.
Radioactive Metallic Gold Colloids Coated with Silver and Their Distribution in Lung and Its Lymphatics Following Intra-Pulmonary Administration: Therapeutic Implications in Primary Lung and Bronchiogenic Tumors. P. F. Hahn and E. L. Carothers.—p. 400.
Invasive Red-Pigmented Tumour (Erythrophoroma) in Red Male Platyfish (Platypoecilus Maculatus Var. Rubra). F. N. Ghadially and H. J. Whiteley.—p. 405.
Mouse Liver Catalase: Antagonistic Effect of Tumour Tissue upon Hormonal Control Mechanisms. D. H. Adams.—p. 409.
Transplantation of Skin Components During Chemical Carcinogenesis with 20-Methylcholanthrene. R. E. Billingham, J. W. Orr and D. L. Woodhouse.—p. 417.
Local Greying of Hair in Mice Treated with X Rays and Radiomimetic Drugs. E. Boyland and S. Sargent.—p. 433.
Reactivity of Aromatic Bonds, with Reference to Carcinogenic Compounds of 1:2-Benzanthracene. H. H. Greenwood.—p. 441.

British Medical Journal, London

1:397-448 (Feb. 23) 1952

Observations on Prolonged Cortisone Administration in Rheumatoid Arthritis. W. S. C. Copeman, O. Savage, P. M. F. Bishop and others.—p. 397.
Sickle-Cell Trait in Southern India. H. Lehmann and M. Cutbush.—p. 404.
Sickle-Cell Trait in Western Nigeria: Survey of 1,881 Cases in the Yoruba. D. B. Jelliffe and J. Humphreys.—p. 405.
*Iron and "Physiological" Anaemia of Pregnancy. N. Benstead and G. W. Theobald.—p. 407.
Haemoglobin Levels in Adults and Children. W. T. C. Berry, P. J. Cowin and H. E. Magee.—p. 410.
Effect of Vitamin-K Preparations on Hypoprothrombinaemia Induced by Dicoumarol and Tromexan. A. S. Douglas and A. Brown.—p. 412.
Acquired Sensitivity to Para-Aminosalicylic Acid. S. J. Steel.—p. 415.
Relation Between Sensitivity to Thiopentone, Sulphonamides, and Sunlight. F. Evans and J. Gould.—p. 417.
*Terramycin in Infections in Infants and Children. B. Wolman and A. Holzel.—p. 419.

Iron and "Physiological" Anemia of Pregnancy.—Estimations of hemoglobin and packed red cell volume were made for 2,000 women attending a prenatal clinic at or before the 16th week of pregnancy. Matched groups of these young healthy women were then studied during the administration of various types of iron therapy. The authors concluded that: (1) "physiological" anemia of pregnancy is associated with a low or subnormal mean corpuscular hemoglobin concentration; (2) normal (nonpregnant) blood values are maintained if therapeutic doses of ferrous sulfate are administered throughout pregnancy; and (3) administration of ferrous sulfate, or of molybdenized iron from the 24th to the 32nd week of pregnancy results in recovery from the commencing "physiological" anemia, followed by maintenance of normal (nonpregnant) blood values. Tablets containing ferrous sulfate and molybdenum were not found to be more efficacious than ferrous sulfate tablets either in preventing or treating the "physiological" anemia of pregnancy, but they were better tolerated. The authors suggest that ferrous sulfate is not a suitable preparation for routine administration of iron in prenatal clinics. They think that the controlled administration of iron to a large group of women should be undertaken to determine whether the incidence of hypertension would thereby be lessened. It would also be of interest to determine whether the maintenance of the normal hemoglobin level throughout pregnancy is associated with the accepted 23% increase in blood volume during pregnancy.

Terramycin in Infection in Children.—This report is based on the use of terramycin in 66 children: 35 with pneumonia, 10 with upper respiratory tract infections, 6 with tonsillitis, 3 with pyuria, and 12 with purulent conjunctivitis. Terramycin was available in capsules as the crystalline hydrochloride salt, and as a yellow crystalline powder that dissolves easily in a specially prepared cherry-mint-flavored liquid to make an elixir. A solution containing 25 mg. of terramycin as the crystalline hydrochloride dissolved in 5 cc. of distilled water with 62.5 mg. of sodium chloride and 25 mg. of sodium borate, was available for ophthalmic use. The elixir was given every six hours by mouth in doses of 50 mg. per pound (450 gm.) of body weight per day for seven days to each of 54 patients. The nurses preferred it to other antibiotics, because it was taken so readily by infants and children. Thirty-four of 35 patients with pneumonia responded rapidly, in most cases within 24 hours; one patient with a Friedländer's bacillus pneumonia died. Ten patients with upper respiratory tract infections, six with tonsillitis, and three with pyuria also showed a rapid and dramatic response. Eleven of 12 infants with purulent conjunctivitis responded rapidly. There were no toxic reactions, and it is stressed that terramycin, because of its wide spectrum of antibacterial activity and its easy administration, is particularly valuable in pediatric practice.

Clinica Pediatrica, Bologna

33:749-828 (Dec.) 1951. Partial Index

*Multiple Puncture Antituberculous Vaccination with Petragnani's Essential Anatubcrculin: Considerations. G. Buonomini, L. Poli and G. Santopadre.—p. 749.

Clinical and Roentgenologic Findings After 10 Years in Children Vaccinated with Petragnani's Anatuberculin According to Salvioli's Technique. III. Late Information on the "Dolo-Test." A. Ferro and S. Taronna.—p. 771.

Fate of Persons Vaccinated Orally with BCG in Bologna from 1926 to 1934: Comparisons with Persons Vaccinated During Same Time with "Maragliano" Vaccine. A. Degli Esposti and D. Giovanetti.—p. 781.

Multiple Puncture Antituberculous Vaccination.—Petragnani's anatuberculin vaccine is prepared from Mycobacterium tuberculosis organisms that have been killed with formaldehyde and stabilized by a process that reduces the virulence of the bacteria but preserves their morphological and chemical characteristics. The stabilized, killed bacteria are diluted in a sterile isotonic sodium chloride solution in the proportion of 3 mg. to 1 cc. of the suspension. When used for diagnostic purposes, this suspension is allowed to settle and only the supernatant fluid (Petragnani's diagnostic anatuberculin) is employed. The presence of the allergic state may be detected with great sensitivity. Twenty-four children between the ages of 6 months and 6 years were vaccinated in the deltoid area with Petragnani's anatuberculin vaccine incorporated in a 46% solution of polyvinyl pyrrolidone ("subtosan"), using Birkhaug's multiple puncture apparatus. The inflammatory reactions in which there was an elevated papuloerythematous scar that in 15 to 20 days faded and contracted to the size of a pin head were called "closed vaccinal microfoci." The inflammatory reactions in which a tender infiltration appeared with a small fistula through which an exudate containing some bacteria of the vaccine was eliminated for six to seven days were called "fistulous vaccinal microfoci." Reactivation of the inflammatory process did not occur spontaneously, but was observed whenever a second vaccination was performed. This proved that allergy to tuberculin is always preceded by a definite bacterial allergy. Both allergies, once established, may last for as long as a year. Periodic tests with intradermal injection of 0.1 cc. of Petragnani's diagnostic anatuberculin always resulted in positive reactions in all the children. After the vaccination the erythrocyte sedimentation rate and the number of leukocytes, especially eosinophils, had increased, whereas the number of neutrophils had decreased. Biopsy of a portion of the tissue with the inflammatory process eight months after the vaccination revealed a cellular reaction with micronodules containing cells that resembled Langhans' giant cells. The hypothesis that antituberculous vaccination also produces a nonspecific immunization seems to have been proved during a 1950-51 epidemic of influenza when, of the 32 of 48 hospitalized children who had the disease, 29 had not been vaccinated. Antituberculous vaccination with Petragnani's anatuberculin vaccine incorporated in polyvinyl pyrrolidone does not interfere with the growth of the infant, and pain, cicatrices, and unpleasant effects are avoided.

Deutsche medizinische Wochenschrift, Stuttgart

77:257-288 (Feb. 29) 1952. Partial Index

"The Acute Abdomen." W. Dick.—p. 257.

*Endocarditis Lenta as "Reactive Reticulosis" with Particular Consideration of Changes of the Liver. F. -E. Schmengler and F. Loogen.—p. 259.

Hematogenic Infectious Hepatitis. G. Rewerts.—p. 264.

*Treatment of Coronary Thrombosis with Anticoagulants. E. F. von Hueber and R. Tölk.—p. 271.

Subacute Bacterial Endocarditis and Reticuloendothelial System.—Liver function tests performed on 28 patients with subacute bacterial endocarditis showed a positive Takata reaction in all patients and a positive Gross reaction in the 11 patients on whom this test was performed. Thymol turbidity and cadmium tests were positive in nearly all patients, while the Weltmann coagulation column nearly always was lengthened. Electrophoretic changes showed a considerable increase of gamma globulins. One patient with clinical recovery presented normal electrophoretic values, but Gross and Weltmann's test showed pathological values. There was little increase in alpha globulins. Relative hypoalbuminemia was observed in all the patients, but was only rarely associated with hypoproteinemia, while two patients had hyperproteinemia. All these observations suggest a considerable increase of function of the reticuloendothelial system in subacute bacterial endocarditis. Sternal puncture revealed a pronounced increase of the lymphoid reticulum cells, and to a somewhat lesser degree of the plasma cellular elements. The size of the liver was increased in all the patients who also had urobilinogenuria. Laparoscopy revealed fine nodular changes of the surface of the liver in addition to the increased size of the organ. Microscopic examination showed swelling of the liver cells, fatty degeneration, and focal proliferation of Kupffer's stellate cells of the liver. On the whole the macroscopic-laparoscopic changes were more impressive than the microscopic changes. As a result of these observations, the authors present their dualistic concept of subacute bacterial endocarditis as follows: It is a chronic infection caused by cocci that results in two reactions: one involves local infection of the cardiac valves, and the other is characterized by a reaction of the active mesenchyma. The authors are convinced that the basic pathogenic mechanism of this phenomenon is infectious-allergic. The changes in function and structure of the reticuloendothelial system that follow the "rheumatic damage" with its infectious-allergic basis are more important in determining the type and prognosis of the disease than the circulatory disorder. Whether the organism overcomes the infection depends on the reaction of the reticuloendothelial system. Subacute bacterial endocarditis therefore is to be considered as a "reactive reticulosis."

Anticoagulant Treatment of Coronary Artery Disease.—Of 100 patients with myocardial infarction, coronary thrombosis without infarction, or with threatened infarction, 50 were treated with ethyl biscoumacetate (tromexan®), bishydroxycoumarin (dicumarol®), or heparin combined with ethyl biscoumacetate. The other 50 patients were given the usual treatment without anticoagulants. Of the 50 patients treated with anticoagulants, the infarction was prevented in 2 with threatened infarction and in 2 with coronary thrombosis without infarction. One patient with threatened infarction was treated successfully with anticoagulants for seven weeks, but death resulted from a fresh infarction of the anterior wall despite a carefully maintained prothrombin level of 10 to 15% of normal. Of the 50 patients treated with anticoagulants, thromboembolic complications occurred in 3, in contrast to 17 of the 50 patients who did not receive anticoagulants. None of these 3 patients died, while 5 of the 17 did. There were 3 deaths in the group treated with anticoagulants and 24 deaths in the other group; the lower mortality in the group treated with anticoagulants depends on the prevention of thromboembolic complications and perhaps also on preventing extension of the thrombotic process. The authors agree with Fullerton and co-workers that anticoagulants reduce the mortality of myocardial infarction. There is rapid regression of the electrocardiographic and clinical signs of infarction, and the course of the disease is less severe. Recovery occurs sooner. It seems that the collateral supply of the cardiac muscle is improved by the reduced coagulability of the blood and the formation of mural thrombi is prevented. Rare undesirable side-effects such as hematuria may be controlled easily by the administration of vitamin K. The period of strict rest in bed and of hospitalization was shortened in the patients treated with anticoagulants.

Irish Journal of Medical Science, Dublin

314:49-96 (Feb.) 1952

Symphysiotomy or Pubiotomy. Why? When? and How? A. P. Barry. —p. 49.
Surgical Treatment of Retinal Detachments. H. Weve.—p. 74.
*Tuberculin Survey in Ireland. D. S. Price.—p. 85.
Stellate Ganglion Block in Apoplexy. P. B. B. Gatenby.—p. 92.

Tuberculin Survey in Ireland.—A total of 10,000 tuberculin tests were made in order to obtain information about the tuberculin reactions of the 2,955,107 inhabitants of the Republic of [illegible]d. The survey included every age group from infancy to [illegible] and persons in every walk of life. The "urban dwellers" [illegible] drawn chiefly from country towns of 4,000 to 6,000 popu[illegible]. Rural dwellers were from small villages of less than 500 population. Two tests were made, first with a 1 in 5,000 concentration of old tuberculin intradermally, and second, with a 1 in 100 concentration (1 mg.) intradermally for final test. The tuberculin dilutions were never more than two weeks old. The preliminary test was performed by a tuberculosis officer or a private physician in some instances, but every final test in the survey was done by vaccinators of the BCG committee, who spend all their time testing and vaccinating, and have had much experience in intradermal injections. The tuberculin positivity rate was definitely higher in urban than in rural areas, but in some instances isolated towns had a very low rate for an "urban" area. Certain rural areas near industrial towns had a high rate. At the ages of 5, 15, and after 17 years, definite increases in positivity occurred both in rural and urban areas. The aim should be to render persons BCG-positive before they are exposed to infection. In rural areas some delay may be allowed, that is, the child may be vaccinated in the first term at primary school or first term at boarding school, but in urban areas precautionary vaccination before entering primary or secondary school is indicated. Young adults from rural areas should be vaccinated before they go to any other place, such as before they enter an occupation, college, or the army in an urban area. Retests of those already vaccinated should be performed at the ages of 4, 13 and 17, and any who have negative reactions should be revaccinated. Persons exposed to tuberculosis contacts should be vaccinated as early as possible.

Journal of Clinical Pathology, London

5:1-128 (Feb.) 1952

Mechanism and Interrelationships of Flocculation Tests. N. F. Maclagan, N. H. Martin and J. B. Lunnon.—p. 1.
Influence of Age upon Serum Iron in Normal Subjects. R. Pirrie.—p. 10.
*Amino-Aciduria and Copper Metabolism in Hepatolenticular Degeneration. J. D. Spillane, J. W. Keyser and R. A. Parker.—p. 16.
Nitroprusside Method for Determination of Blood Glutathione. R. H. S. Thompson and D. Watson.—p. 25.
Determination of Blood Glutathione by Amperometric Titration. D. S. Bidmead and D. Watson.—p. 30.
Nectrotizing Pulmonary Arteriopathy Associated with Pulmonary Hypertension. W. S. C. Symmers.—p. 36.
Liver Glycogen in Diabetes Mellitus. J. Vallance-Owen.—p. 42.
Primary Amyloidosis with Renal and Myocardial Failure. A. W. Williams. —p. 54.
Bone-Marrow Embolism. R. B. H. Tierney.—p. 63.
Culture of Human Bone-Marrow in Vitro. Reversibility Between Normoblastic and Megaloblastic Series of Cells. L. G. Lajtha.—p. 67.
Bone Marrow in Paget's Disease (Osteitis Deformans) with Special Emphasis on Megakaryocytes. P. Pizzolato and L. Raider.—p. 86.
Effects of Phenothiazine Derivative (RP. 3300) on Red Cell Preservation. H. Chaplin Jr., H. Crawford, M. Cutbush and P. L. Mollison.—p. 91.
Comparative Study of Direct Matching Techniques in Blood Transfusion. O. G. Dodge.—p. 102.

Aminoaciduria and Copper Metabolism in Hepatolenticular Degeneration.—Spillane and collaborators say that there is no doubt about the importance of the discovery by Uzman and Denny-Brown in 1948 of severe and persistent aminoaciduria in a patient with hepatolenticular degeneration. After citing several other reports on aminoaciduria in hepatolenticular degeneration, they point out that a second abnormality that may be present in hepatolenticular degeneration is an increase in the copper content of both brain and liver. They measured the urinary amino nitrogen excretion in 13 persons with disease of the basal ganglia and in nine normal persons. It was increased only in a boy with hepatolenticular degeneration, neither of whose parents had aminoaciduria. In this case, liver function tests during the month before death showed little evidence of liver disease. At necropsy hepatic cirrhosis was found. This patient excreted large amounts of copper in the urine. Administration of dimercaprol (BAL) increased the copper output. Brain and liver tissue obtained at necropsy contained excessive amounts of copper.

Journal of Laryngology and Otology, London

66:111-158 (March) 1952

Dysphagia Lusoria: With Record of Three Cases. N. Asherson.—p. 111.
Origin and Treatment of Malignant Disease of Upper Jaw and Nasal Sinuses. A. J. Moffett.—p. 132.
Penicillin, Aureomycin and Chloramphenicol in Treatment of Acute Otitis Media. R. S. Lewis, J. D. Gray and A. B. Hewlett.—p. 142.
Peripheral Extrinsic and Central Intrinsic Equilibrium of Vestibular Organ. E. Wodak.—p. 148.

Lancet, London

1:429-474 (March 1) 1952

*Controlled Trials of Treatment of Haemolytic Disease of the Newborn. P. L. Mollison and W. Walker.—p. 429.
Use of Intrathecal Aureomycin in Meningitis: Methods of Obtaining Bacteriostatic Concentrations of Aureomycin in Cerebrospinal Fluid. K. M. S. Ainley-Walker and F. D. Bosanquet.—p. 433.
Para-Acetamidobenzaldehyde Thiosemicarbazone in Treatment of Leprosy. J. Lowe.—p. 436.
Identification of 3:5:3'-L-Triiodothyronine in Human Plasma. J. Gross and R. Pitt-Rivers.—p. 439.
Mercury and Pink Disease. A. Holzel and T. James.—p. 441.
Anaemia and Nitrogen Retention in Patients with Chronic Renal Failure. M. H. Roscoe.—p. 444.
*Bornholm Disease and Coxsackie Virus. C. M. Brown, D. C. Liddle and J. O'H. Tobin.—p. 445.
Familial Intestinal Polyposis with Pigmentation of Lips, Oral Mucosa, Face and Digits. H. H. Wolff.—p. 446.

Treatment of Hemolytic Disease of the Newborn.—In this study two types of treatment were given according to a predetermined scheme. Exchange transfusion for hemolytic disease began to be used in Britain in 1947, and at about the same time many obstetricians began to practice premature induction of labor in cases in which an inf[illegible]olytic disease was expected. To better assess thes[illegible], it was decided that several medical [illegible] results presented in this paper are based on observations on 477 infants with hemolytic disease of the newborn. The treatment to be given in each case was determined by a system of random numbers so that approximately half of the infants received each treatment. Induction of labor three to five weeks before the expected day of delivery was associated with a lower survival rate than spontaneous delivery, though the difference was not significant. Exchange transfusion was followed by a significantly higher survival rate than simple transfusion, both treatments being carried out equally early after birth. The incidence of kernicterus after exchange transfusion was very low. Although immature infants with cord-hemoglobin concentrations above 15 gm. were not treated, the incidence of fatal kernicterus was as high as 1 in 12, and it seems likely that this incidence could have been reduced by exchange transfusion. There was no case of kernicterus among the 12 immature infants with cord-hemoglobin concentrations exceeding 17.5 gm. (118% Haldane). Since experience seems important in performing exchange transfusions and since in very ill infants the chance of survival following exchange transfusion is related to the way the procedure is carried out, it is of importance that a woman expected to give birth to an infant with hemolytic disease be delivered in an institution with personnel with a high degree of technical efficiency in exchange transfusion.

Bornholm Disease and Coxsackie Virus.—Bornholm disease (epidemic myalgia) had been presumed to be of virus origin for years. In 1949, Curnen and associates in the United States isolated a Coxsackie virus from a patient with myalgia during an epidemic of aseptic meningitis associated with a Coxsackie virus. In 1950 Weller and associates found an antigenically similar strain in an outbreak of Bornholm disease in the United States. Coxsackie viruses have also been isolated during epidemics in Switzerland and Israel. In Britain Findlay and Howard in 1950 and Giffin in 1951 established a relationship between Coxsackie virus and epidemic myalgia. During the summer and autumn of 1951 numerous epidemics of epidemic myalgia occurred in the British Isles, and one of these is reported here. The first three cases were in children from the same house, whose chief initial symptom was abdominal pain. Two were admitted to a hospital as surgical emergencies and one underwent appendectomy. Two new cases appeared at three day intervals, and four days later the first two of the main group of patients became ill. The epidemic continued for another fortnight and ceased abruptly. Sixteen families, consisting of 37 adults and 43 children, were investigated. Among these, 23 children and 7 adults belonging to 14 families, were found to be affected. Involvement of the abdominal muscles was the outstanding feature of the epidemic; 20 of 23 children and 5 of 7 adults complained of pain at this site. Headache was more marked in adults than in children. There were no cases of lymphocytic meningitis. The incubation period appeared to be two to eight days. Two of the children with typical symptoms of Bornholm disease were hospitalized, and specimens from them were investigated for a virus. A Coxsackie virus of Dalldorf's group B was isolated from the feces of one. Neutralization tests with the serums of the two patients were performed in mice less than 24 hours old, and the results indicate that both children had been recently infected with the virus isolated from one of them.

Medical Journal of Australia, Sydney

1:133-168 (Feb. 2) 1952

Physicist's Contribution to Cancer Treatment and Research. J. H. Martin.—p. 134.
Clinic for Deaf Children: Analysis of Cases. P. R. Davey.—p. 137.
*Melanoblastoma. V. J. McGovern.—p. 139.
Preliminary Report on Use of Prefabricated Nylon Weave in Repair of Ventral Hernia. V. H. Cumberland.—p. 143.
*Bilateral Phaeochromocytomata. E. H. Stokes.—p. 144.

Melanoblastomas.—Primary melanoblastomas of the skin originate from the melanoblasts in the basal layer of the epidermis, at the dermalepidermal junction. The absence of a connection between the tumor mass and the junction layer, unless it has been destroyed by ulceration, indicates that the tumor is either secondary or nonmalignant. Moles are potentially malignant as long as junctional components persist. The transformation of a benign pigmented mole into a malignant tumor is indicated by a change in color, enlargement or swelling, spontaneous or posttraumatic ulceration, or the appearance of pigmented satellites surrounding it. Metastases in regional lymph nodes or in distant viscera sometimes cause the first symptoms noticed by the patient. Pigmented lesions on the feet and legs frequently undergo malignant change and should always be regarded with suspicion. Quiescent lesions often become active after trauma, which may be slight; malignant moles have sometimes appeared at the site of trauma where they did not previously exist. The five year survival rate is approximately 15%. Conservative surgery, consisting of simple excision of the local tumor and extirpation of regional metastases when they become demonstrable, is apparently the best treatment; radical mutilations do not seem to be justified.

Bilateral Pheochromocytomas.—Drenching sweats are one of the most characteristic features of hypertension (persistent or paroxysmal) resulting from a tumor of the adrenal medulla. Adrenal tumors are seldom bilateral, only 15 cases having been reported up to 1947. Intravenous injection of histamine or some other adrenal stimulatory agent may help to establish the diagnosis when hypertension is paroxysmal; when it is persistent, the use of an adrenergic blocking agent such as piperoxan is indicated. Radiological examination after perirenal insufflation may give important diagnostic information; simple clinical tests may produce responses indicating the presence of pheochromocytomas, such as extreme postural hypotension when the blood pressure is recorded with the patient standing upright or a poor response to the cold pressor test. Peripheral vasomotor disturbances and low grade fever often accompany the disease. Increasing success in the surgical removal of adrenal tumors with subsequent disappearance of hypertension makes the differential diagnosis of this condition vitally important.

Minerva Medica, Turin

43:1-48 (Jan. 5) 1952. **Partial Index**

Diabetes Mellitus and Vascular Pathology. G. C. Dogliotti, G. Lenti and C. Mattei.—p. 2.
*Capillaries and Process of Coagulation in Diabetes. C. Mattei and G. Crolle.—p. 9.
*"Plethoric Type" of Diabetes Mellitus: Clinical Contribution and Pathogenetic and Therapeutic Considerations. G. Lenti and L. Brighenti.—p. 16.

Capillaries and Coagulation Process in Diabetes.—Bleeding and coagulation time and capillary resistance were studied in 87 patients, between the ages of 11 and 80 years, with diabetes. Bleeding and clotting time was generally normal, sometimes delayed, but rarely prolonged. When clotting time was prolonged, bleeding time was shortened and vice versa. Capillary fragility was increased in 22 patients, of whom 18 were more than 50 years old. Capillaroscopy and capillarography revealed morphological and functional anomalies of the capillaries in 46 of these patients. Dilatation was mild in 13 and pronounced in 15, in some of whom capillary aneurysms had formed. Blood flow in the capillaries was slow in 21 patients, in 2 of whom it was periodically interrupted, sometimes for as long as 10 to 15 seconds. Capillary spasm was observed in eight patients. The commonest and severest disturbance was a decrease in the number of capillaries. The process of coagulation was studied in 30 additional patients with diabetes, between the ages of 39 and 78, of whom 25 had hypertension. Bleeding time was shortened in 22 patients, and the time that oxalated blood required to clot was slightly delayed in 4 patients. The prothrombin level, prothrombin utilization, and number of thrombocytes were normal. The capillary fragility test was positive in 23 patients, of whom 22 were more than 50 years old. Vascular changes, especially lesions to the capillaries, were the commonest dystrophic manifestations in the patients of both groups and were related to their age and degree of hypertension.

"Plethoric Type" of Diabetes Mellitus.—The authors have used the term "plethoric type" to designate the peculiar association of diabetes mellitus with obesity, vascular plethora, hypercholesteremia, arterial hypertension, and severe vascular lesions. It was observed by them in 11 men and 3 women between the ages of 45 and 68 years. The commonest and severest lesions were found in the blood vessels, especially the capillaries. Telecardiograms revealed that the aorta and the heart, especially the left side, were enlarged and the arch of the aorta prolonged. Electrocardiograms revealed lesions of the myocardium and the coronary artery. A tendency to thrombosis and plethora, with excess hemoglobin, globulin, and thrombocytes, and an increase of circulating blood were present. The metabolism of carbohydrates, proteins, and fats was greatly disturbed. From the pathogenetic point of view these patients had a hereditary tendency to hyperfunction of the hypophysis, but a primary lesion of this gland was not present. On the contrary, these patients were all members of families in which a predisposition to general metabolic and cardiovascular disturbances may have facilitated the onset of this syndrome. According to the most modern concepts, diabetes may be attributable to a hereditary dysgenopathy that causes generalized degenerative lesions of the mesenchyme, with metabolic and cardiovascular lesions. Diabetes is more likely to appear in persons with this mesenchymal lesion who have also a tendency to hyperfunction of the hypophysis and the adrenal cortex. Prognosis of the "plethoric type" of diabetes mellitus is unfavorable because of the extension of massive vascular lesions to the most important organs and because of the metabolic disturbances. Adequate diet, administration of slow acting insulin, lipotropic substances, and male sex hormones combined with vitamin E are indicated. When there is a tendency to thrombosis with a paradoxical delayed bleeding and coagulation time and decreased prothrombin utilization, anticoagulants, vitamin C and vitamin P, and iodine preparations are indicated.

43:113-140 (Jan. 23) 1952

Anticoagulant Therapy in Treatment of Angina Pectoris. R. Cataldi. —p. 132.
*Chlorophyll in Ozena. G. Finocchi.—p. 134.

Chlorophyll in Ozena.—Three patients with ozena at the initial stage and seven in whom the disease had extended to the nasopharynx causing headaches, bone atrophy, formation of scabs, and the characteristic unpleasant odor were treated with chlorophyll. A sponge saturated with a 0.5% isotonic solution of chlorophyll or a 1% chlorophyll ointment was applied to the nasal mucous membranes daily for two to three hours. Within a few days the bad odor was eliminated, scabs and headache decreased, and the mucous membranes acquired a deeper color. When the treatment was interrupted for 10 or more days, ozena reappeared rapidly. Elimination of the odor was permanent while the chlorophyll ointment or large doses of a powder obtained from the isotonic solution were applied every two days. Although chlorophyll does not cure ozena, it neutralizes the offensive odor.

Nordisk Medicine, Stockholm

47:43-74 (Jan. 11) 1952. Partial Index

Bronchial Tuberculosis in Children. K. Rogstad.—p. 46.
Medical Treatment of Cavernous Tuberculosis of Lungs. S. Frostad. —p. 52.
Intrapleural Pneumothorax as Complication in Local Anesthesia and Thoracoplasty. T. Wessel Aas.—p. 54.
Sugar Content of Cerebrospinal Fluid in Tuberculous Meningitis. J. Hoel. —p. 56.
Does Vagotomy Cause Pancreatic Changes? Experimental Study in Cats. I. R. Sandberg.—p. 57.
*Triethylene Melamine Treatment of Hodgkin's Disease and Other Malignant Diseases. P. B. Hansen and J. Bichel.—p. 58.

Triethylene Melamine Treatment of Hodgkin's Disease and Other Malignant Diseases.—Triethylene melamine is a strongly cytotoxic substance with definite but short-lived palliative effect in various malignant diseases, particularly Hodgkin's disease. Like nitrogen mustard, it exerts a toxic effect, especially on rapidly proliferating hematopoietic tissue. The individual sensitivity varies greatly. Hansen and Bichel say that no definite lines of guidance for dosage can be laid down at present. Depression of the bone marrow occurs later than with nitrogen mustard, lasts longer, and may sometimes be irreversible. The patient must be closely observed with frequent studies of the blood and bone marrow. In 21 patients, all with generalized forms of disease, treated since October, 1950, triethylene melamine was given orally in single doses of from 1.25 to 5 mg., usually with a total initial course of from 10 to 20 mg. during from 8 to 10 days. After an interval of from one to three weeks doses of from 2.5 to 5 mg. were often administered for a varying time, depending on the effect. In 8 of the 12 cases of Hodgkin's disease improvement was seen at once following the treatment, and in four cases the treatment was ineffective. In one instance the good effect has persisted for 10 months after treatment, in another recurrence set in after six and a half months. In two patients treated constantly with small doses a kind of maintenance therapy seems to have been arrived at. Improvement occurred in one of three cases of chronic lymphatic leukemia, but was followed by a fatal aplastic anemia ascribed partly to progression of the disease and partly to toxic effects of the treatment. The treatment had no effect in three cases of myelomatosis, a case of lymphosarcomatosis, and a case of cancer of the breast. In a case of reticulosarcomatosis progress of the disease has been checked for some time by administration of about 2.5 mg. of the substance every two or three weeks. The advantages of the substance are the easy method of administration and the few side-effects.

Pédiatrie, Lyon

7:7-140 (No. 1) 1952. Partial Index

*Cochleovestibular Complications of Streptomycin and Dihydrostreptomycin Treatment of Tuberculous Meningitis. G. Mouriquand, D. Dechavanne and J. Bonnet.—p. 7.
Clinical, Radiological and Therapeutic Study of the Vomiting of Infants. M. Kaplan, J. Zourbas and J. Martinetti.—p. 15.
Sponge Kidney. P. Josserand, R. Annino, L. Mugniery and others.—p. 31.
Ullrich-Bonnevie Status and Dolichostenomelia. L. P. R. Keizer.—p. 45.

Complications of Streptomycin in Tuberculous Meningitis.—Deafness appearing in the course of tuberculous meningitis treated with streptomycin or dihydrostreptomycin is caused by the treatment and not by the disease. Vestibular disturbances of spontaneous origin, such as vertigo and nystagmus, do not often occur in children; induced disturbances, on the other hand, are very frequent but well compensated. Dihydrostreptomycin may cause fewer vestibular disturbances than streptomycin, but, when the large doses required in meningitis are used, its toxic effect on the vestibular apparatus seems to be almost as great as those of streptomycin. Deafness following streptomycin is rare, occurring only when large doses have been given, especially by the intrathecal route; but total bilateral deafness frequently follows dihydrostreptomycin, appearing in from 4 to 14 months after treatment is begun. The size of the dose is apparently less important than the method of administration; dihydrostreptomycin should not be administered intrathecally. Cochlear disturbances resulting in deafness are often caused by toxins, such as quinine, salicylates, and streptomycin, to which the inner ear is especially sensitive; the fact that they occur in tuberculous meningitis and only rarely in other forms of tuberculosis can best be explained by the prolonged treatment and large doses of streptomycin required when the meninges are involved.

Portugal Médico, Porto

36:1-60 (Jan.) 1952

Gaucher's Disease. A. da Rocha Brito.—p. 1.
*Intra-Arterial Infusion of Vasodilators in Peripheral Circulatory Insufficiency. C. Agueda de Azevedo and M. Castro Henriquez.—p. 31.

Intra-Arterial Infusion of Vasodilators in Peripheral Circulatory Insufficiency.—The serious and progressive pathological changes occurring in the vessels in disturbances of the peripheral circulation cannot be arrested by any medication so far discovered. Treatment should be designed to maintain the vitality of the tissues. This can be accomplished by inhibiting the vasoconstrictor tone of the diseased vessels, thus permitting the maximum use of their remaining capacity and a fuller and more rapid development of the collateral circulation. Intra-arterial infusion of vasodilating drugs has been shown to have advantages over other methods of treatment. The authors use a combination of acetylcholine, neostigmine (prostigmin®), and procaine (novocaine®), because these drugs have a valuable synergistic action and the inconveniences caused by each alone are diminished when they are used together. The powerful and immediate action of acetylcholine is reinforced and prolonged by that of neostigmine; the cholinergic effects of these medications on the respiratory, cardiovascular, and digestive systems are inhibited by diluting the acetylcholine in procaine instead of in isotonic sodium chloride solution; the analgesic and vasodilating properties of the procaine are also utilized. Care must be taken that the needle is in the lumen of the artery because injection of the solution into a vein may produce disagreeable systemic effects. Infusion should be slow, lasting 15 minutes or more. Almost all the patients were given three 15 mg. tablets of neostigmine bromide daily. The infusions were given at intervals varying from 24 hours to 2 or 3 days and later by from 4 to 8 or even 15 days. A sensation of warmth and relief of pain followed the infusions, which are tolerated better than lumbar infiltrations. The nutritional condition of the affected tissues improves as treatment continues; ulcerations tend to heal; response to tests of circulatory capacity is better; and the skin recovers its normal texture. Respiratory difficulty is sometimes experienced when the rate of infusion is too rapid; this disappears promptly when it is reduced. Positive response to skin tests for sensitivity to procaine and a history of asthmatic attacks are contraindications to the use of this method.

Presse Médicale, Paris

60:153-172 (Feb. 6) 1952

*Treatment of Cerebral Apoplexy and of Its Paralytical Sequelae. R. Leriche.—p. 153.
*Infection of Man with Bovine Type of Koch's Bacillus in Switzerland. J. Meyer, R. Sartory and J. Touillier.—p. 155.

Treatment of Apoplexy.—In discussing emergency treatment of apoplexy caused by cerebral hemorrhage, thrombosis, or embolism, Leriche once more presents his concept that a vasomotor disturbance precedes any vascular lesion, is frequently responsible for it, and is always associated with it. With respect to the cerebral circulation he assumes the presence of localized and continued spasms associated with embolism or thrombosis that is responsible for perifocal zones of reduced circulation around the focus of cerebral ischemia, generally associated with stasis. He first performed stellate ganglion block in 1936, with good results in two patients with cerebral embolism, and since then has obtained immediate improvement in eight additional cases of apoplexy by this method. Cerebral embolism seemed to respond best to the treatment, but he also obtained an excellent result in a case of hemiplegia due to thromboangiitis in the rolandic area. In a ninth case, that of a girl 5½ years old, with hemiplegia following a contusion of the internal carotid artery caused by injury to the right subtonsillar region, the hemiplegia of eight days' duration subsided after five infiltrations of the stellate ganglion. The technique recommended by the author is as follows: Infiltration should be performed as soon as possible at the contralateral side of the paralysis. Treatment should be started with 10 cc. of a 1% solution of dibucaine hydrochloride and should be repeated after six hours with 20 cc. Then one infiltration should be made every day for two weeks. From time to time the infiltration should be performed on the paralyzed side, and may be combined with infiltration of the lumbar chain. The report by Naffziger and Adams on 155 cases of apoplexy treated satisfactorily with infiltrations of the stellate ganglion corroborates the author's experience on a much larger scale. The author believes that sympathectomy should be reserved for patients who have had several cerebrovascular accidents, and he reports the case of such a patient, aged 49, who had been followed after the sympathectomy for 28 months and whose cerebral condition remained excellent. Results of stellate ganglion infiltrations in more than 100 patients with long-standing hemiplegia of various types showed that some patients were therapeutic failures while others obtained pronounced improvement. Considering the distress of patients with long-standing hemiplegia and particularly those with aphasia, the authors would like to see the method of early stellate ganglion infiltration given a therapeutic trial on a large scale.

Infection of Man with Bovine Type of Koch's Bacillus.—The incidence and mortality rate of human and bovine tuberculosis were studied statistically among the population of five Swiss cantons, particularly in relation to the strict control measures applied against bovine tuberculosis by the federal veterinary office. The bovine type of tubercle bacillus was found to be responsible for 50% of the cases of intestinal and cervical lymph node tuberculosis. On the basis of this finding and the low incidence of the bovine type of pulmonary tuberculosis, it may be assumed that one-third of the cases of tuberculosis in man are due to the bovine type of Koch's bacillus. In the canton of Glaris in 1940 the mortality rate attributable to the bovine type of tuberculosis was 0.9 per 10,000 inhabitants, whereas today no case of bovine type is recorded among the fatal cases of tuberculosis. The influence of the decrease in bovine tuberculosis on cervical lymph node and abdominal tuberculosis in man has been clearly demonstrated by the statistical records of the communities of various cantons. From 1891 to 1949 the incidence of abdominal tuberculosis has dropped from 3.9 to 2.2% in relation to the total number of tuberculosis cases (4.2 to 3.5 per 10,000 inhabitants).

Quarterly Journal of Medicine, Oxford

21:1-122 (Jan.) 1952

Haemopoietic Activity of Folic Acid Treated with Xanthine Oxidase. W. Jacobson and P. M. Good.—p. 1.
Familial Disorder of Blood Coagulation Due to Deficiency of Labile Factor. A. J. Brink and C. S. Kingsley.—p. 19.
Osteomalacia and Renal Glycosuria in Adults: Metabolic Investigation of Case with Particular Reference to Its Relation to Fanconi Syndrome and to Treatment. I. A. Anderson, A. Miller and A. P. Kenny.—p. 33.
Observations on Fanconi Syndrome and Renal Hyperchloraemic Acidosis in Adult. M. D. Milne, S. W. Stanbury and A. E. Thomson.—p. 61.
Certain Aspects of Medical Application of Isotopic Tracers: Critical Review. G. Popják.—p. 83.

Revista de Obstetricia y Ginecologia, Caracas

11:405-558 (No. 4) 1951. **Partial Index**

Asphyxia of the Newborn. T. Monroy P.—p. 405.
Preeclampsia and Eclampsia. O. Agüero.—p. 437.
Cesarean Section. J. Calcaño R.—p. 455.
*Supernumerary Nipples. M. Sanchez Carvajal, O. Agüero and A. Marcano.—p. 470.
Comments on a Case of Uterine Rupture. H. Paez Rincon and M. H. del Gallego.—p. 490.

Supernumerary Nipples.—A systematic study of the incidence and localization of supernumerary nipples among 10,254 women showed that they were present in 336, or 3.27%. The total number found was 412; in 266 patients they occurred singly. Sixty-five patients had two, four had three, and one had four. They occurred below the breasts in most cases, and were more frequent on the left side than on the right.

Schweizerische medizinische Wochenschrift, Basel

82:121-144 (Feb. 9) 1952. **Partial Index**

Head's Zones and Pulmonary Tuberculosis. P. Miescher.—p. 121.
*Treatment of Chronic Headache with Mixture of Hydrogenated Alkaloids of Ergot (Hydergine). M. and S. Stauffenegger.—p. 128.
Determination of Alkaline Serum Phosphatase in Theory and Practice. H. Aebi.—p. 135.

Treatment of Headache with Hydrogenated Ergot Alkaloids.—Hydergine (a mixture of the three hydrogenated ergot alkaloids dihydroergocornine, dihydroergocristine, and dihydroergokryptine) was given a trial in the prophylaxis of chronic, refractory headache in 111 women and 50 men. Of the 161 patients, 95 had vasomotor cephalalgia, 37 had genuine migraine, 17 had post-traumatic cephalalgia, and 12 had genuine trigeminal neuralgia as well as atypical trigeminal and occipital neuralgia. Hydergine was administered orally and treatment was started with 5 drops three times daily after meals; the dose then was progressively increased until 25 drops (1.25 mg.) were given three times daily as the maximum dose for three weeks, while as a rule the entire course of the treatment varied from 9 to 11 weeks. Of the 161 patients, 12 (7%) were cured, 40 (25%) were considerably improved, 29 (18%) were improved, 29 (18%) were improved temporarily, and 51 (32%) were unchanged. The patients with genuine migraine responded best to hydergine. Of the 161 patients, only 29 had mild untoward reactions, such as anorexia, diarrhea, constipation, palpitation, vertigo, and fatigue, which as a rule were mild and required discontinuation of the drug in only 2 cases. The pathogenesis of vascular headache is still an unsolved problem. The generally accepted concept is that a considerable part is played by a vegetative neurovascular disturbance, which during the migraine attack induces pathological vasodilatation and increased pulse amplitude. During the free intervals there seems to be a tendency to increased vasomotor tone. It does not seem likely that hydergine, a vasodilating and sympathicolytic agent, exerts any direct influence on the pathological vascular dilatation during the migraine attack. Hydergine may, however, prevent the vasoconstriction that in classic cases precedes the painful dilatation phase, thus diminishing the excessive vascular reactivity. Other factors also seem to play their part.

82:249-272 (March 8) 1952. **Partial Index**

*Intermittent Therapy of Pulmonary Tuberculosis with Streptomycin and *p*-Aminosalicylic Acid. E. Tanner, E. Wiesmann and P. Baer.—p. 249.
Experiments with Clinical Use of Terramycin Amphoter. F. Andina and O. Allemann.—p. 253.
Studies on Mode of Action of Extract of Carob Seeds. C. Rivier.—p. 256.
Experiences with Preparation Containing Three Sulfonamides. K. Markiewicz, P. Jucker, M. Eyband and C. Tütsch.—p. 264.

Intermittent Use of Streptomycin and *p*-Aminosalicylic Acid in Pulmonary Tuberculosis.—A total of 150 patients, the majority of whom had pulmonary tuberculosis, were treated intermittently with streptomycin and with *p*-aminosalicylic acid. Every third day the patients were given 1 gm. of streptomycin intramuscularly and on the intervening two days they were given from 10 to 15 gm. of *p*-aminosalicylic acid. In cases of auditory impairment the authors do not administer dihydrostreptomycin and in the presence of renal disturbances, the doses of streptomycin as well as of *p*-aminosalicylic acid are reduced. Clinical observations revealed that intermittent administration of 30 gm. of streptomycin in combination with *p*-aminosalicylic acid over a period of 90 days produced about the same effect as continuous administration of streptomycin for 90 days. This method of administration did not result in a noticeable increase in resistance of tubercle bacilli against either streptomycin or *p*-aminosalicylic acid. If streptomycin had been given every day for 90 days, from 41 to 49% of the patients could have been expected to develop resistance toward streptomycin. There were no neurotoxic manifestations, and the subjective secondary effects were slight. The prolonged treatment that is made possible by the combination of intermittent streptomycin with *p*-aminosalicylic acid should prove advantageous in that the human body requires considerable time to mobilize its defenses against tuberculosis.

Semaine des Hôpitaux de Paris

28:463-504 (Feb. 14) 1952. **Partial Index**

Hypertension During Gestation in Women Previously Suffering from Deficient Diet. Levy-Solal, Grasset, Bret and Lissitzki.—p. 463.
*New Treatment of Menopause; Polysteroid Hormonal Implantation. A. Lichtwitz and J. Crépeaux.—p. 473.
Note on Possible Mechanism and Treatment of Staphylococcic Bullae of the Lung. F. Contamin and A. Herrault.—p. 484.

New Treatment of Menopause: Implantation of Steroid Hormones.—Treatment of menopausal complaints should vary according to their character. Hypothalamic-vegetative manifestations such as hot flashes, emotivity, and anxiety may be treated by sedation, administration of estrogens, androgens, and progesterone, and psychotherapy. Physical and behavioral changes due to senescence should be treated by the subcutaneous implantation of estrogen, progesterone, testosterone, and desoxycorticosterone. Four years' experience with this method indicates it to be the treatment of choice when signs of senescence are present, whether the patients have been subjected to hysterectomy or not. Dosage is variable, and implantation is facilitated by simultaneous administration of all four steroids in a single implant, using a specially constructed cylindrical trocar. Improvement begins about the third week and lasts approximately six months. The skin loses its dryness, body contour is more youthful, fingernails are no longer brittle, hair regains its luster, physical activity increases, and emotional and intellectual tone are restored. Subsequent implantations produce similar results; they may, however, be either less efficacious or, infrequently, more so. Dosage on reimplantation should be adjusted in the light of results obtained, complications if any, and data secured from vaginal cytology. This type of hormonal implantation retards certain manifestations of premature senility and relieves menopausal distress in from 85 to 90% of cases in which genuine signs of senescence have appeared.

Union Médicale du Canada, Montreal

81:119-242 (Feb.) 1952. **Partial Index**

*Four Cases of Cat-Scratch Fever at Montreal—Acute Benign Infectious Lymphoreticulosis. H. Charbonneau.—p. 123.
*On the Virus of Benign Infectious Lymphoreticulosis. V. Pavilanis. —p. 129.
Fifteen Years of Bronchoscopy at the Hôpital du Sacré-Coeur. J.-J. Laurier, A. Czitrom and C.-A. Messier.—p. 132.
The Psychosomatic Aspect in Gastro-Enterology. Y. Chaput.—p. 136.
Cardiac Contraction. J. Longtin.—p. 142.

Cat Scratch Fever.—Acute benign infectious lymphoreticulosis is not always caused by contact with cats; infection sometimes occurs as a result of brier scratches, superficial injuries from splinters, metal fragments, and the like, and may even be contracted through the eyes, mouth, or pharynx. The disease may be troublesome, but its evolution is favorable, ending in cure. At the outset, glandular tuberculosis or Hodgkin's disease may be suspected; later, the condition may be mistaken for venereal lymphogranuloma. Biopsy reports are not always conclusive, and sometimes they tend to confirm the diagnosis of Hodgkin's disease. Negative reactions to various tests, notably to Frei antigen and tuberculin, will eliminate other possible conditions, and a positive intradermal reaction to the specific antigen of lymphoreticulosis will establish the diagnosis. The prognosis is good, but the course of the disease is variable. There may be spontaneous resolution or more or less prolonged suppuration. Terramycin accelerates healing and is apparently better than chloramphenicol (chloromycetin®) or aureomycin.

Virus of Benign Infectious Lymphoreticulosis.—The virus nature of the so-called cat scratch fever was demonstrated when it was successfully transmitted from man to monkeys. Incubation is slow; from 28 to 40 days after inoculation a subcutaneous granuloma with a necrotic center appears at the site of injection, followed by swelling of the regional lymph nodes. Microscopic examination reveals periadenitis and, in the node, microabscesses composed of hyperplastic reticular cells with clear protoplasm and lymphocytes. Reticular cells and plasma cells may be found in the cutaneous granuloma, as well as large lymphocytes with granular or elementary bodies in their protoplasm. These basophilic bodies are not found after suppuration of the lymph nodes has begun, when active virus is no longer contained in the pathological tissue. Complement-fixation studies have shown that the cat scratch fever virus belongs to the psittacosis-granuloma group, all the members of which are comparatively large, ranging in size from 0.2 to 0.5 μ. They are stainable with basophilic stains, have a well-defined internal structure, and have specific thermolabile antigens by which they may be differentiated. Certain members of the group are sensitive to the sulfonamides and to antibiotics, notably aureomycin.

Zeitschrift f. Geburtshilfe & Gynäkologie, Stuttgart

136:1-112 (No. 1) 1952. **Partial Index**

*Demonstration of Male Sex Hormones in Pregnancy Urine and in Placenta. H. Riess.—p. 1.
Is the Term "Decidual Reaction" Justified? H. G. Müller.—p. 23.
Clinical and Histologic Aspects of Carcinoma Gelatinosum of Uterine Cervix. E. Klees.—p. 30.
Therapeutic Results in Primary Ovarian Carcinoma. C. Schroeder and H. Hartl.—p. 36.
Clinical and Pathologic Aspects of Primary Carcinoma of Uterine Tubes. H. W. Boschann.—p. 58.

Male Sex Hormone in Pregnancy Urine and in Placenta.—Contradictory results of investigations on the urinary excretion of male hormones in pregnancy induced Riess to study the androgen content of the urine of 40 women toward the end of pregnancy. The placentas of 12 of these women were also examined for androgens. The author describes the extraction method he used and how the extracts were assayed by means of the cytological regeneration test on the vesicular gland of mice, as described by Loewe and Voss. It was found that all pregnancy urines and placentas contain androgens, irrespective of the sex of the infant. Although there seem to be sex-dependent differences in the amounts of androgens, these differences cannot be used to forecast the sex of the fetus in utero.

BOOK REVIEWS

Internal Medicine: Its Theory and Practice. Originally edited by John H. Musser, B.S., M.D., F.A.C.P. Fifth edition edited by Michael G. Wohl, M.D., F.A.C.P., Associate Professor of Medicine, Temple University School of Medicine, Philadelphia. Cloth. $15. Pp. 1563, with 246 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1951.

This is the first edition of this well-known medical text to be published since Dr. Musser's death. Although the general format and arrangement have been maintained, Dr. Wohl, with the assistance of 80 illustrious contributors, has produced what is almost a new book. The text is designed primarily for the medical student and the physician engaged in general practice. Particular attention has been directed to the clinical aspects of diseases, but, since an understanding of the clinical manifestations requires some knowledge of physiology, biochemistry, and pathology, the contributors have endeavored to integrate these sciences with bedside medicine.

In addition to the usual sections on infectious diseases, physical and chemical agents, diseases of nutrition, metabolism and endocrine glands, diseases of allergy and collagen diseases, systemic diseases, and diseases of the nervous system, there are two unique sections. One is on geriatrics and rehabilitation and the other on the psychosomatic aspects of medical practice. A short description of the general adaptation syndrome by Hans Selye is particularly well done. All the sections are of high caliber, concise, up-to-date, critical, and include discussion of modern therapeutic procedures, which, in the various authors' experience, are of proved value. Most sections are followed by a brief, well-selected bibliography.

The illustrations are well selected, and the roentgenograms are, particularly, well produced. The quality of the colored plates is also, in general, unusually good. The book can be highly recommended as an up-to-date, well-written, comprehensive, one-volume textbook of medicine.

Topics in Physical Chemistry: A Supplementary Text for Students of Medicine. By W. Mansfield Clark, Ph.D., Sc.D., DeLamar Professor of Physiological Chemistry, Johns Hopkins University School of Medicine, Baltimore. Second edition. Cloth. $10. Pp. 777, with illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1952.

This book was written "to meet the diverse needs of medical students and to be drawn upon as the student of elementary biochemistry and the maturing student of medicine may find occasion." Since the book is intended for individual study and not for use in a formal course, each section is carefully developed. The mathematics is kept to a minimum and the little calculus that is used is adequately explained.

The book deals with many topics; some of them are: density and some of its clinical uses, sedimentation in gravitational and centrifugal fields, properties of solutions, diffusion, phenomena associated with semipermeable membranes, laws of mass action, electrolytes, equilibria in proton exchanges, properties of protein solutions, a stepwise treatment of the equilibrium states of blood electrolytes, thermodynamics, oxidation-reduction, glass electrode and potentiometry, the polarograph, atomic, and molecular structures, refraction, double refraction and polarized light, stereoisomerism, emission and absorption of radiant energy, luminescence, and topics on colloid chemistry. Interspersed with this large volume of information is Professor Clark's philosophy and quiet humor, which makes the reading of the book a most pleasant experience.

The author ended the preface to the first edition with an expression of gratitude to his publishers "for their acceptance of a text that is sufficiently unconventional to constitute a risk." It is true that the book is unconventional, but it probably was never a risk. On the contrary, it should prove successful, because it so well meets the purpose for which it was written.

Newer Ethical Problems in Medicine and Surgery. By Bernard J. Ficarra, M.D., K.S.G., Diplomate of American Board of Surgery, Associate Visiting Surgeon, Brooklyn Cancer Institute, Brooklyn, N. Y. Foreword by Very Rev. Francis J. Connell, C.SS.R., S.T.D., Dean of School of Sacred Theology, Catholic University of America, Washington, D. C. Preface by Most Rev. John King Mussio, J.C.D., Bishop of Steubenville, Ohio. Cloth. $3.75. Pp. 168. Newman Press, Westminster, Maryland, 1951.

This book is by a Roman Catholic surgeon, but it is intended as a guide to all physicians, regardless of their particular creed. The author is unquestionably a devout man possessed of estimable moral beliefs and qualities. He dwells on ethical principles that pertain to the practice of medicine, and, although what he has written should not be considered the official teaching of the Catholic church, none of the material is inconsistent with its teaching. Although his book is supposed to deal with newer ethical problems in medicine and surgery, there are few subjects concerning which transgressions are not discussed from a moral as well as an ethical viewpoint.

Such subjects as abortion, ectopic pregnancy, and mutilation, which have been treated extensively in earlier books on pastoral medicine, are discussed briefly for the sake of completeness, but the main consideration is devoted to the more recent group of medicomoral problems, such as contraception, sterilization, euthanasia, and artificial fecundation. The author believes that there is a universal decadence of ethical standards, and he says that decline is reflected in the conduct of physicians. Physicians are members of a "noble profession." He feels that the ideals of this profession are lofty, but he is sure that they "are being trampled under foot in the race for gain, power and prestige." Therefore, he solicits a reaffirmation of faith in the fundamental Christian principles of medical ethics. His treatment of this important subject is scientific and scholarly.

In one of the last chapters he discusses "socialized medicine," and a little later he quotes verbatim the "Principles of Medical Ethics" of the American Medical Association. Concerning the former, he says, "We sincerely hope that any type of state or federal interference with medical education and the practice of medicine will never become an American reality." This chapter should be read by every member of the American medical profession, and its tenets should be upheld by those who now control the political destiny of America.

Dr. Ficarra's book is entitled to careful scrutiny by all physicians who hope to conduct their practices according to those principles, which, as he says, "reflect honor upon mankind and at the same time will be pleasing to God."

A Synopsis of Ophthalmology. By J. L. C. Martin-Doyle, M.R.C.S., L.R.C.P., D.O., Surgeon, Worcester City and County Eye Hospital, Worcester, England. Cloth. $4.50. Pp. 238. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; John Wright & Sons, Ltd., 42-44, Triangle West, Bristol, 8, 1951.

There is a great need for concise, accurate, pocket-sized outlines of specialized branches of medicine; these books should be sufficiently complete to be informative without being so inclusive as to be overwhelming to the medical student and general practitioner. The medical curriculum is so crowded and the hours allotted to ophthalmology so inadequate that few students find time to do extensive reading in this field. Most recent textbooks have a tendency to be so elaborate that they are more likely to be used as reference books than as texts for complete reading. This new book, therefore, fills a definite need, especially for the undergraduate student. It presents an outline of ophthalmology sufficiently complete for its purpose, well written in concise form, modern in every sense, and logically arranged in handy reference form. Although exception might be taken to minor points, the book, in general, follows accepted teachings and is sufficiently up-to-date to include special chapters on chemotherapy, corticotropin (ACTH) and cortisone, and allergy. There are no illustrations.

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

Psychosurgical Problems. By Columbia Greystone Associates Second Group. Fred A. Mettler, M.D, Ph.D., Sc.D., editor. Cloth. $7. Pp. 357, with 56 illustrations. Blakiston Company (division of Doubleday & Company, Inc.), 1012 Walnut St., Philadelphia 5, 1952.

This is the second report of a project designed to investigate the results of certain operations on the brain in the treatment of mental disease. The first report (1949) was entitled "Selective Partial Ablation of the Frontal Cortex." According to the summary of the first volume, which is presented in the first chapter of the present report, the first report was concerned with a study of 48 psychotic patients. Twenty-four of the patients were controls who were not operated on, whereas the other 24 were operated on. In order to make remotely valid comparisons, the controls and the patients operated on should have been as nearly similar as possible; however, they were not. Of the controls, 12 were patients regarded as having the worst prognosis, while only one had the best prognosis. The others were intermediate. Of the patients operated on, only 1 was classified as having the worst prognosis, whereas 12 had the best. That the results in the two groups were different is hardly surprising. Furthermore, if the results of the patients operated on are to be comparatively evaluated, the operations should be as nearly identical as possible; however, they were not. Twenty patients had blocks of frontal cortex removed (topectomies), three had gyrectomies, eight had "prefrontal" lobotomies (two done after topectomies), two had transorbital lobotomies, and one had only the superior cerebral veins ligated. The fact that these operations total considerably more than 24 is not explained fully.

The present volume is designed to report the results of "other less commonly employed psychosurgical procedures (notably cortical venous ligation and thermocoagulation)." The group of patients selected for the comparative study is diverse. It consists of schizophrenics of various types, involutional depressives, and manic depressives. The 24 patients range in age from 26 to 52 years, and four entirely different operations were performed on them. They were (1) ligation of "frontal superior cerebral veins" (12 cases), (2) thalamotomy (2 cases), (3) thermocoagulation of the cerebral cortex on the rostral portion of the frontal lobes (2 cases), and (4) transorbital lobotomy (8 cases). In 2 of these 24 cases, there had been previous intracranial surgery. The variation in the surgical procedures was even greater than the above statement would indicate. Six patients were selected as controls; all were schizophrenics: three paranoid, two hebephrenic, and one catatonic. These patients were studied as to changes in their general medical condition, neurological status, olfaction, vestibular function and "autokinesis," response to psychometric examinations, complex mental functions ("memory, learning, mental set, and perceptual tasks"), attitude toward life and life's problems, social behavior, response to a battery of tests referred to as "psychophysiology" (visual acuity, visual fields, perception time, spaced perception, visual intensity discrimination, critical flicker fusion, etc.), and psychiatric symptomatology.

This is a poorly designed project. Study of this varied group of patients treated with a wide variety of operative procedures cannot be expected to promise an answer to any problem. What is lacking is use of the scientific method of approaching a problem and of sound planning before the project was undertaken. The typography of this book is not pleasing and the type face was poorly chosen. As a result, the book is difficult to read.

A Textbook of Orthopedics with a Section on Neurology in Orthopedics. By M. Beckett Howorth, M.D., Clinical Professor of Orthopedic Surgery, New York University Post-Graduate Medical School, New York. In association with Fritz J. Cramer and others. Cloth. $16. Pp. 1110, with 462 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1952.

A new and up-to-date textbook of orthopedics has been urgently needed, and this book supplies the need exceedingly well. The average medical student is given relatively little time for study or instruction in orthopedics. This book will aid him in attaining a better understanding of the subject; however, the book is lengthy for the average medical student, so the material is more relevant for the orthopedic resident and the younger man practicing orthopedic surgery. It should also be useful for the physician whose practice is not limited to orthopedic surgery but who does some orthopedic work. This is particularly true in regard to the description of some of the rarer orthopedic disabilities or in those cases in which differential diagnosis should be carefully considered. The book is readable, and each section is well arranged. The references at the conclusion of each chapter cover the literature well, so that further reading on a subject might be easily continued.

The book is well illustrated by photographs, roentgenograms, and photomicrographs, although, if additional photographs had been used to illustrate some of the rarer conditions described, a greater visual imprint would be left on the reader than that provided by verbal description of the process alone. The section on neurology in relation to orthopedic practice is exceedingly well done, complete, and is a fitting portion of this book. There are many instances in which there is no clear distinction between orthopedics and neurology, or these two fields so overlap that they must be considered together, and the author carefully brings out this relationship. The author is well qualified to write this book, particularly because of his clinical experience in both practicing and teaching orthopedic surgery and his keen interest in the subject.

Post-Graduate Lectures on Orthopedic Diagnosis and Indications. Volume III, Section A: *Tuberculosis of the Skeletal System.* Section B: Osteomyelitis. By Arthur Steindler, M.D., F.A.C.S., Professor of Orthopedic Surgery, State University of Iowa, Iowa City. Cloth. $8.75. Pp. 284, with 255 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1952.

This is the third volume of postgraduate lectures to be published under the editorship of Arthur Steindler, professor emeritus of orthopedic surgery, of the State University of Iowa. These lectures were given from year to year by Dr. Steindler while he was professor and chairman of the department of orthopedic surgery at the State University of Iowa.

Volume 3 contains lectures on tuberculosis of the skeletal system and osteomyelitis. Section A is subdivided into six lectures: it begins with a general discussion of pathology, diagnosis, and treatment, and, in the next five chapters, the characteristics of tuberculosis of the spine, the hip joints, the knees, feet, and ankles, and the upper extremities are reviewed. The lectures on osteomyelitis are similarly arranged.

The publisher has stated that these lectures lead the student through the fundamental sciences to an understanding of the clinical situation; this enables him to build a sound rationale for management and treatment. This is true insofar as the orthodox and commonly accepted theories or knowledge of the pathology and treatment of tuberculosis and of osteomyelitis are concerned. The discussion of the biotherapy and chemotherapy of tuberculosis and of osteomyelitis is surprisingly brief.

Although there is little that may be considered new or original in this text, this book should be of value to medical students and teachers of orthopedic surgery.

A. F. Holleman, Organic Chemistry. By J. P. Wibaut, Professor of Organic Chemistry, University of Amsterdam. Translated from sixteenth Dutch edition by Samuel Coffey, D.Sc., F.R.I.C., Section Head, Research Department, I.C.I. Dyestuffs Division, Manchester (England). [Eighth English edition]. Cloth. $9. Pp. 660, with 64 illustrations. Elsevier Pub. Co., 402 Lovett Blvd., Houston 6, Texas, 1951.

The last English edition of this book was published in 1930. The new editor has retained the style of the older volumes and has presented the material from the standpoint of both the organic chemical theory of structure and the physical chemical viewpoint. The opening section is concerned with the general aspects of organic chemistry; there are brief discussions of qualitative and quantitative organic analysis, determination of molecular weights and physical constants, and methods for the separation and identification of organic compounds. The aliphatic, aromatic, alicyclic, and heterocyclic compounds are discussed.

The book is advertised as a textbook not only for organic chemists but also for students of biology and medicine. Topics of interest to the latter group are mainly treated from the organic viewpoint. Little is said with respect to the metabolism or physiological effects of the substances of biologic or medical interest. Each chapter is divided into numbered topical sections. Frequent references are made throughout the text to these numbered sections as a means of rapid cross reference. This is an excellent text for ready reference to chemical facts and the theoretical principles of organic chemistry.

QUERIES AND MINOR NOTES

DIABETIC FOODS

To the Editor:—*The mother of a child with diabetes is unable to purchase special low carbohydrate foods because of lack of funds and is seeking methods for their home preparation. The child is especially fond of eating jelly. Can you furnish suitable recipes for the preparation of jelly from fruit juices or flavoring agents?* *M.D., Montana.*

Answer.—The best low carbohydrate foods are the vegetables containing 3% and 6% carbohydrates. These, in large quantities, are generally cheaper canned than fresh. Next to these, grapefruit, strawberries, and oranges, in season, are the most satisfacfactory. If these foods are not available, one could use apples, in half the quantity of other fruits.

Take fresh strawberries, wash and drain, add two or three saccharin tablets, and simmer on a low flame for about 20 minutes. This is a substitute for strawberry jam. Rhubarb jam can be prepared the same way.

Plain gelatin can be used, and, if used with fruit, will make the serving appear larger. One must beware of commercial gelatin preparations, because many contain sugar. "D-Zerta" is useful as a gelatin, but, in general, one should discourage patients from using artificially prepared foods for diabetics. It is better to use the foods that most persons eat.

Cottage, cream, or ordinary cheese, peanut butter, eggs, fish, and chicken are cheaper than most cuts of meat.

The patient should eat raw cucumbers, tomatoes, radishes, celery, and even cabbage, and his mother should can vegetables and fruits, such as blueberries, peaches, and pears, while they are in season. It might be helpful for the child to keep a vegetable garden and to raise chickens.

THE BOLEN TEST FOR CANCER

To the Editor:—*How is the technique and interpretation of the Bolen test used as a screening measure for the exclusion of cancer?* *E. P. McKinney, M.D., Nacogdoches, Texas.*

Answer.—The Bolen diagnostic test for cancer, based on differences in blood clot retraction patterns in cancerous and noncancerous persons, requires little time and equipment. The middle finger or the ear lobe is punctured with a sharp needle, and three drops of blood are collected by touching a glass slide to the puncture site. On drying, cancerous and noncancerous blood specimens form different patterns macroscopically and microscopically. The normal drop dries with a dark mass at its center. Microscopically, fibrin strands are seen to form a web enmeshing the corpuscles. Leukocytes are few, and red blood cells are tightly packed. Rouleau formation is present, with no variation in size or shape of the erythrocytes. The drop of cancerous blood dries without the normal dark mass at the center; the blood breaks down into "dots." Microscopically, there is no rouleau formation. Erythrocytes are grouped in disorderly heaps; some are shrunken and indistinct in outline, and others are hemolyzed. The appearance is one of agglutinated cells in lakes of plasma. Granules, spicules, and rays are numerous, occurring either singly or in clumps; the fibrin content is greatly reduced. Typical photomicrographs may be seen in the *American Journal of Surgery* (**80**:505 [Dec.] 1950) or in the *American Journal of Digestive Diseases* (**17**:31 [Jan.] 1951).

The Bolen test was 97% correct in cancer patients and 100% correct in noncancerous persons when tested by Bolen and 69% correct in cancer patients and 92% correct in the noncancerous persons when tested by others. Hawk, Thoma, and Inkley (*Cancer Research* **11**:157, 1951) say that "A negative test does not exclude the diagnosis of cancer, nor does a positive test necessarily indicate the presence of cancer. However, a positive test should be followed by intense diagnostic effort before the diagnosis of malignant neoplasm is abandoned." The Consultants on Cancer Diagnostic Procedures of the National Advisory Cancer Council, at the National Cancer Institute in September, 1951, considering the several screening tests for cancer, commented that "none have been found so far to have sufficient sensitivity or specificity to have promise as a cancer diagnostic test."

THE SEDIMENTATION RATE AND ACUTE NEPHRITIS

To the Editor:—*Eight months ago, a five-year-old girl had an acute flare-up of hemorrhagic nephritis, with mild edema of the eyelids and 3+ albumin in the urine. With symptomatic treatment, the edema disappeared, and, within three days, the urine was found normal on routine analysis. The sedimentation rate at this time (Landau-Adams) was 21 mm. per hour. The girl was kept at bed rest for two months; by this time, the sedimentation rate had dropped to 12 mm. When mild household activity was permitted the sedimentation rate jumped to 20. She was again put to bed. Within two months, the sedimentation rate was down to 11, but activity again raised it to 21. This time, I made nonprotein nitrogen, creatinine, and Addis determinations; these were normal. I have always understood that the sedimentation rate is one of the better ways to judge the amount of activity permissible after acute glomerular nephritis. How long is one justified in ordering bed rest on the basis of this test alone if everything else is normal?* *M.D., Ohio.*

Answer.—The statement is not clear as to whether the child had an initial attack of acute hemorrhagic nephritis or an acute flare-up of preexisting nephritis. If the former is the case, complete recovery may be assumed when a concentrated specimen of urine shows a normal maximal specific gravity, normal sediment, and no proteinuria. It must be emphasized that urine samples obtained without adequate dehydration, and therefore not maximally concentrated, can be very deceptive. The erythrocyte sedimentation rate is a sensitive laboratory sign and so readily influenced by intercurrent infections and other factors that it can scarcely be used as the sole criterion for permission or restriction of physical activity. In any event, eight months is a long time to confine a child because of acute glomerulonephritis. The psychological harm of this restriction may ultimately be more serious than the possible effects of moderate physical activity on residual nephritis. It would be a good idea to search for evidence of infection, such as sinusitis and pyelitis, that may influence the sedimentation rate.

PEDICULOSIS OF EYELASHES

To the Editor:—*A 3-year-old patient has a pediculosis infestation of his eyelashes, and I have been trying to clear this condition with 3% ammoniated mercury ointment. The pediculi that have hatched seem to be thriving with this form of treatment. All other remedies that are recommended for pediculosis capitis should be kept away from the eyes. I have contemplated removal of the lashes only as a last resort and would appreciate advice as to what form of therapy is most efficacious.* *M.D., Florida.*

Answer.—This patient's lid infestation probably represents an infestation of pediculosis pubis rather than pediculosis capitis. It is suggested that the cul de sacs of the lids be filled with 1% yellow oxide of mercury ointment and that the ointment be kept on for three days. At that time, the lid margins should be vigorously cleaned with cotton tipped applicators moistened with water. The source of the infestation should be investigated. Perhaps, the initial infestation has cleared, and the child is being reinfested.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

TRAUMA AND LICHEN PLANUS

To the Editor:—*I have a patient with lichen planus involving the skin of the dorsa of his hands, the flexor surface of his wrists, and the anterior surface of his legs. Last summer, he scratched the dorsum of his right hand; a week or two later the scratch was still noticeable, and there were many small, itchy papules around it. This was followed by the gradual development of lichen planus in the other areas mentioned. I found two cases of lichen planus in the literature that apparently followed an injury; one followed a dog bite and the other an ant bite. Schwartz and Tulipan, in their book on occupational diseases, make no mention of lichen planus after trauma in industry. Are there such cases? Could this man's lichen planus have occurred as a result of an industrial injury?*

M.D., Minnesota.

Answer.—Schwartz and Tulipan (Occupational Diseases of the Skin, Philadelphia, Lea & Febiger, 1939, p. 63) give the following description of lichen planus: "This disease, like psoriasis, will arrange itself in linear formation wherever the patient scratches himself." On the same page it is stated of psoriasis, "It occurs in scratch marks in linear formation." The appearance of typical lesions at sites of injury in psoriasis and lichen planus is known as Köbner's *phenomenon.* Only those lesions of lichen planus that developed at the site of the scratches on the dorsa of the patient's hand are the result of the occupational trauma. The patient must have had a predisposition to lichen planus before the advent of occupational trauma.

LARYNGEAL NERVE PALSY

To the Editor:—*A 48-year-old man was treated with terramycin for virus pneumonia. Subsequently, he developed proctitis and stomatitis, both of which ultimately resolved. With stomatitis he became hoarse. Direct laryngoscopy shows a complete paralysis of the right vocal cord. No disease of the larynx or adjacent fields was demonstrated. X-ray investigation revealed no cause for this condition. Could pneumonia virus affect the right recurrent laryngeal nerve to produce this condition? Could terramycin be in any way responsible? What can be done to restore the activity of this nerve and vocal cord?*

Carlton C. Curtiss, M.D., Syracuse, N. Y.

Answer.—A review of the literature does not indicate laryngeal nerve palsy to be a direct and definitive complication of primary atypical pneumonia. There are also no reports that such palsies represent toxic reactions occurring in the course of, or due to, therapy with terramycin. Hence, it will be necessary to look elsewhere for the cause of the paralysis of the right recurrent laryngeal nerve. As for treatment of the palsy, no specific therapy of value is known, unless the paralysis is due to pressure on the nerve from some outside source. If the latter should be true, then a relief of such pressure would probably be followed by a return of function. Large doses of thiamine are not indicated.

PRECORDIAL DISCOMFORT FOLLOWING MYOCARDIAL INFARCTION

To the Editor:—*A 48-year-old man had coronary occlusion with posterior wall infarction on July 28, 1951. A rapid sedimentation rate and characteristic electrocardiogram findings were present. Treatment was symptomatic and included seven weeks of bed rest. Could the electrocardiogram become normal 12 weeks following the attack? The patient feels better but has residual discomfort in the precordial area, usually following aggravation and excitement.*

M.D., New York.

Answer.—From the description given, there seems to be no doubt about the diagnosis of acute coronary occlusion with posterior wall infarction. The treatment also seems to have been quite adequate, and by this time, the scar should be as well healed as is possible. In most cases, even those involving the posterior wall, there is usually some residual evidence of the scar in the electrocardiogram. That need cause no particular apprehension, since it is the rule and since many persons with such scars live long after their attacks. Not infrequently however, the record does become normal.

The symptoms are another matter. The description is not complete enough to indicate whether there has been recurrent angina pectoris, which sometimes occurs after acute myocardial infarction, or whether the precordial discomfort mentioned is simply that due to heart consciousness and is similar to the precordial pain of neurocirculatory asthenia. More careful study of this particular symptom is indicated, but a common result of coronary thrombosis in a nervous, sensitive person is heart consciousness without any coronary insufficiency.

DUODENAL ULCER

To the Editor:—*A white man, aged 25, who works in the tissue fixing department of our hospital, has had recurrent attacks of severe pain in the upper abdomen for five years. The attacks began while he was with the armed forces in Germany and have occurred at intervals of four to six months, although, occasionally, they have occurred on successive days. Most of the attacks occur at night, during the winter and spring months. The epigastric pain takes 5 to 10 minutes to reach its peak and lasts 4 to 5 hours. He has no nausea, but he vomited during the first several attacks and noticed that this relieved the pain for 20 to 25 minutes. He occasionally perspires during an attack. His bowel habits are normal, and between attacks he is perfectly normal. He has undergone gastrointestinal studies, gallbladder studies, blood cell counts, urinalyses, and serum analyses during attacks. The results of these studies have been normal. Serologic tests gave negative results. The pain is relieved only by meperidine (demerol®) hydrochloride. Candy and diphenhydramine (benadryl®) hydrochloride have no effect. Could this be a manifestation of abdominal epilepsy?*

M.D., Pennsylvania.

Answer.—The evidence reported is suggestive of an ulcer of the duodenum. Apparently, the physician thinks that roentgen examination of the stomach and duodenum has eliminated this possibility; however, this may not be the case, unless compression films of both the stomach and duodenum were made to determine whether a niche was present. If no evidence for organic disease in the stomach and duodenum is found by means of this technique, the abdominal pain is most likely of psychogenic origin. If the latter is true, the diagnosis is conversion hysteria. It is presupposed that the physician has taken into consideration all known causes of upper abdominal distress that could explain such a disturbance in a 25-year-old man. It may be well to see whether the precipitating factors that brought on this pain while the patient was in the armed forces can be elicited. His work in the tissue fixing department of your hospital probably has nothing to do with the pain, except that the environmental situation may be a psychological factor.

CYANIDE CONTAMINATION AND WOUND HEALING

To the Editor:—*I read the request in Queries and Minor Notes, March 15, 1952, for information on the treatment of cyanide contaminated wounds.*

We use cyanide solutions in our industry, and I see a fair number of such wounds. Over the years, I have tried many preparations and have found that unguentine® (anhydro-p-hydroxy-mercuri-m-cresol, zinc oxide, alum compound, phenol, and oils of eucalyptus and red thyme in a petrolatum and oleostearin base) gives the best results. It relieves the pain and loosens the slough at the base of the wound. When this has occurred, the wound is treated as any other wound. I do no cleansing other than that required to clean the surrounding skin, using soap or another detergent and water.

As for dermatitis, cyanide solutions do not cause trouble in unbroken skin, unless the person is especially susceptible. It is not an ulcerative condition, but is usually an erythematous condition, sometimes a finely papular one. For this I find wet dressings of aluminum acetate ("domeboro tabs") soothing and often curative. Susceptible persons are always transferred to other jobs. I have not used acidolate® (a skin detergent prepared from sulfated vegetable oils, liquid petrolatum, and water) or "pH6," a detergent, but shall do so at the first opportunity.

Ottmar W. Frey, M.D.
Oneida Limited,
Oneida, N. Y.

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HEART DISEASE FORTY YEARS AGO AND NOW

Paul D. White, M.D., Boston

Despite the disturbed state of the world at present and the increase in the prevalence of heart disease, physicians and patients can look back over the last 40 years with much satisfaction; what is more important, we can look forward to the next 40 years with hope and confidence. The state of the world is not so bad as it is painted. Newspapers are filled with gloomy headlines, and it has become almost a fad to publicize the distressing events in current history and to foster fear and pessimism about the world of tomorrow. Even in medicine there is an overemphasis on the alarm reaction and the effect of the unhappy emotions on body, mind, and soul. Worse events than present ones were taking place a generation ago in many different parts of the world, but the press was less avid then. There was no radio, communications were slow, and the millions of persons who starved to death or died of exanthematic typhus and other plagues in remote parts of the world were unheard of. What we did not know of we did not worry about. The exploitation of enslaved persons was just as serious, or even more so, a generation ago. One interesting item, which betokens the medievalism of that era, was that there was no woman suffrage. Half the human race had little or nothing to say directly about political decisions. This is simply one instance of the fact that there were fewer rights for mankind then than there are now.

Forty years ago, cardiology was essentially unborn. Adam's death was probably due to coronary disease, but there was no diagnosis. In fact, the cases of most victims of coronary disease were not diagnosed prior to 30 or 40 years ago; yet today coronary disease looms as one of the greatest ills of all humanity. Herrick, still alive and alert at an advanced age, abruptly changed the statistics of the causes of death, although it took 10 years in the slow progress of medicine for us to recognize the vital importance of the contribution he made in 1912.

"THE GOOD OLD DAYS"

In 1911, when I was finishing my studies in medical school and beginning my hospital internships, there was little time for seeing, studying, and treating heart disease for two reasons. In the first place, physicians were preoccupied with the diagnosis and treatment of the acute infections, which included thousands of cases of infantile dysentery, typhoid in great epidemics every fall, pneumonia in young and old persons alike, diphtheria, tuberculosis, and even meningitis and empyema, diseases we see little of today. In some parts of the world these diseases are still rampant: for example, tuberculosis and diphtheria in youth, and a high infant mortality in ravaged countries after the war. The second reason for physicians' neglect of heart disease in those days was failure to recognize the disease in many patients, both because of ignorance about the signs and because of lack of methods for study. At that time, electrocardiography was just beginning to be developed, and the sphygmomanometer and the x-ray machine were neglected. More important is the fact that physicians did not know how to ask the right questions or to listen carefully to the description of the symptoms of patients. Worst of all was inadequate therapy and almost complete failure to diagnose heart disease etiologically. In 1914, Richard Cabot published his important papers on the causes of heart disease.[1]

World War I interrupted medical progress and also the beginning development of our knowledge of heart disease at a critical time. For a few years, the after-effects of the war engrossed the physicians' attention. I took part in a medical mission to Macedonia in 1919, under the aegis of the American Red Cross, after being demobilized from the Army in France, and worked with several colleagues and with Greek medical officers in an attempt to control a serious epidemic of exanthematic typhus that killed thousands of inhabitants of the Balkans, but I saw only one case during a second medical mission in Macedonia in 1948, after World War II.

On looking over my hospital records written in the years from 1911 to 1913, I have come across cases of heart disease that were diagnosed simply as hypertrophy and dilatation of the heart or valvular disease, without any statement of cause, such as hypertension, coronary atherosclerosis, rheumatic fever, or syphilis. Our frequent

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Read at the Fifth Clinical Session of the American Medical Association, Los Angeles, Dec. 6, 1951.

[1] Cabot, R. C.: Four Common Types of Heart-Disease: Analysis of 600 Cases, J. A. M. A. 63: 1461 (Oct. 24) 1914.

misuse of digitalis, even at that recent date, would be amazing to young physicians of today. We had no good diuretics. We did not limit salt, though we did make patients uncomfortable from thirst by limiting fluids. Such were the good old days!

THE HARD-WON GAINS IN THE LAST GENERATION

Most impressive of all has been the control of infections and the almost complete abolition of some of the most serious ones. Infantile dysentery, typhoid, lobar pneumonia, and meningitis are almost unknown today. The incidence of diphtheria is much reduced. Tuberculosis and syphilis have been on the decline, both in prevalence and in mortality. The reasons for these wonderful changes are several. One of the most important reasons, sometimes overlooked, has been the effect of improvement in living conditions. There are fewer slums in this country now than 40 years ago or than there are in some parts of the world today. With improved living conditions, children no longer sleep three in a bed, as was frequently found when physicians visited some of the poorer districts in Boston years ago. In some parts of the world today, however, the living conditions are as bad or worse than they were in the United States 40 years ago because of war, ignorance, and want. The second factor in the control of infections has been preventive measures, which include stricter quarantine, use of certain drugs, and general education. The most important reason for the rapid reduction of infantile dysentery, a scourge through all recorded history, has been the pasteurization of milk. The failure to enforce such measures today in some parts of the world is responsible for much of the illness in the early years of life and the high infant mortality rate that still exists. The third factor is the use of new drugs, especially the antibiotics.

Accompanying the control of infections, medical and surgical means of diagnosis and treatment of diseases, including many of the chronic maladies, have been improved. At last, all physicians are able to make good diagnoses and effect cures in patients who would have died a generation ago, even if they had been treated by the ablest physicians. If one reads case histories written by Oliver Wendell Holmes when he was visiting physician at the Massachusetts General Hospital from 1847 to 1850, or if one goes back to the history of the treatment of George Washington at the time of his death, one is appalled at the "malpractice" of the best-trained physicians of the day.

With reference to cardiovascular disease, one can recount as first and most important the establishment of cardiovascular diagnosis by etiology 30 years ago with the pioneering in New York and Boston. The second important general advance has been that of the proof of the reversibility, either without therapy or by medical or surgical treatment, of every kind of heart disease formerly considered to be incurable and rapidly fatal.

Congenital heart disease, which was the most difficult of all types to recognize, to diagnose structurally, and to treat, was a hopeless condition in my student days; in fact, it was considered as relatively rare. Now physicians see much more of it, largely because patients come from remote places for treatment, when previously they had remained in their own localities because there was nothing to be done for them. Probably half the patients with congenital heart defects now seen can be either completely cured surgically, as in the case of patency of the ductus arteriosus or coarctation of the aorta, or much benefited, as in the case of the tetralogy of Fallot.

Rheumatic heart disease may cause dilatation of the heart owing to involvement of the myocardium with the production of murmurs, all of which may clear with subsidence of the acute rheumatic process, and sometimes no trace remains. The prevention of hemolytic streptococcus infection by penicillin and other measures and the early treatment of active and severe rheumatic fever in childhood by the new drugs corticotropin (ACTH) and cortisone are already greatly helping to reduce the chronicity of rheumatic fever and its serious after-effects. We may expect that in another generation there will be little rheumatic heart disease.

The mortality from subacute bacterial endocarditis, which is a complication of congenital heart disease and rheumatic heart disease, has been reduced within 10 years, first from 99.9% to 94 or 95% because of the sulfonamides, then down to 20% because of the use of penicillin, streptomycin, and other antibiotics. Thyrotoxic heart disease is practically extinct, owing to the early recognition and proper treatment of thyrotoxicosis. In my early days, this diagnosis was made several times a year; now, I see almost no cases. Syphilitic heart disease and aneurysm of the aorta are disappearing, owing both to early diagnosis and proper treatment of the original syphilitic lesion and to better treatment of aortitis when it is discovered. Hypertensive heart disease has been controlled in a certain number of cases of serious involvement by measures that include lumbodorsal sympathectomy, low sodium and rice diets, and drugs from Veratrum viride or album and of other origin. Pericardial constriction, once called Pick's disease, formerly incurable, can now be cured in over half the patients by expert surgery.

Finally, it is now known that the patient with coronary heart disease can recuperate through the natural development of an adequate collateral circulation or through the good healing of myocardial infarction, even though man has little to do directly with the actual healing process. Many patients with coronary heart disease, including severe angina pectoris on effort or at rest (decubitus) and acute myocardial infarction, are found to be in good health 10, 20, or more years later, something that was unheard of and completely disbelieved as recently as 20 or 30 years ago.

THE PRESENT CHALLENGE

Despite all these advances, the incidence and mortality rates of cardiovascular-renal disease have increased enormously, far more than those of cancer. The relative and absolute incidence of all other causes of death has been decreasing, except for accidental deaths, the rate of which continues without much change. Of all deaths in the United States, 51% can be attributed to cardiovascular-renal diseases. This situation would not be so discouraging if only very old persons died suddenly and peacefully from coronary insufficiency at the age of 90 or 100. This might be a desirable end for all aged persons and would mean elimination of all other causes of death, including cancer, infections, accidents, and wars. Unfortunately, however, at present, the increase in mortality from cardiovascular-renal disease does not occur only in old persons. There has been a great increase of the disease in young adults and those of middle age within the last half generation. There is actually a greater increase in these middle years between 30 and 60 than in the later ages. Here lies the challenge, presented mostly by such conditions as hypertension and coronary atherosclerosis.

THE FUTURE

Many thousands of babies might still be sick and dying of infantile dysentery if in the last generation we had simply built more hospitals to take care of them. This is also true of patients with typhoid, lobar pneumonia, and tuberculosis, but, by eradicating or sharply reducing the incidence of these diseases, we have emptied beds for the care of patients with chronic diseases, especially cancer and cardiovascular-renal diseases, which, though present all around us, were not so well recognized, because our attention was given to the infectious diseases. They also were probably not so common, because not so many persons lived long enough to have cancer or heart disease.

This lesson of the past should be applied to the future. Prevention of disease is of primary importance, and to prevent disease we must know more about the causes in their earliest stages. This can best be learned through research. Thus, medical research, particularly in cardiovascular disease and cancer, should have first priority. For this, we need more skilled research workers who have time to work in adequate laboratories and hospitals with ample facilities. This combination is still lacking in large part. There are many ardent young and middle-aged medical workers in research who cannot continue beyond a few years, because, in order to support their families, they must drop their research to take up medical practice. Thus, more funds are needed to make possible further years of research by trained and experienced physicians and workers in the basic sciences.

Another great lack at present is that of research facilities. World War II and its aftermath prevented the building of new structures of this type, except in a few instances, but, through allocations by private initiative and by Congress, a few laboratories have been constructed in the last few years and others are being constructed now. Examples of such recent building are the new research structures at the Massachusetts General Hospital, the Beth Israel Hospital, and the House of the Good Samaritan in Boston, and New York University and Bellevue Hospital in New York City, a new wing at the University Hospital in Philadelphia, a new research building devoted primarily to cancer and heart disease at Duke medical school, a new cardiovascular unit in Burlington, Vt., the Oklahoma Medical Research Foundation at Oklahoma City, the new cardiovascular laboratory building at Salt Lake City, and new laboratories at Meharry Medical School, an institution for Negro medical students and graduates in Tennessee; however, this is only a fraction of the necessary program and of what has been asked for, and we must continue to aid this development for advances in the future.

At this point, I would like to emphasize the fact that medical research in the laboratory is fundamentally no more basic than medical research in the clinic, since we are dealing with human beings. Both are essential halves of the whole and must be constantly integrated by experts in either the laboratory or the clinic or, at best, in both. The greatest advances have been made by keen observers and patient workers wherever they have been.

Finally, to help this research, aid from all sources should be welcomed and solicited. First, private foundations and institutions, private persons, and physicians can continue to initiate the major part of the support for research. Second, Congress has set up institutes under the Public Health Service in Bethesda that have greatly aided medical research throughout the country in private institutions; the preponderant part of such support has been utilized to stimulate and to promote research planning throughout the land. It is a truism that the medical care of patients in any community is greatly elevated by good medical teaching in that community and that good medical teaching is made better by good medical research. Therefore, in order to improve the level of medical care anywhere in the United States medical research is a vital factor.

Thus, a review of the past 40 years in the life of one person, a cardiologist, can bring much hope and optimism not only to the medical profession but also to sick persons. What is needed now is advance, similar to that in medicine, in the social and economic fields. Physicians are anxious to help in such advances, but with the idea in mind of the constant need and desire to preserve the influence and zeal of the individual person. Those of us who are in contact with the Public Health Service in an advisory capacity realize the importance of fostering private enterprise and are helping to coordinate all workers in the fields of both private and public health.

264 Beacon St.

Influenza Virus Research.—I can accept the principle that scientific research is justified socially only by its direct or potential contribution to human well-being. From this angle I should define the essential objective of influenza virus research as the understanding of the conditions responsible for pandemic influenza of 1918 type—and the establishment of the conditions necessary to prevent its reappearance. One must regard all the work that has been carried out since 1933 as merely the development of the background of technique and interpretation so as to be able to study effectively any new pandemic that may arise. Since science is concerned only with the reproducible and the recurring and is essentially helpless when confronted with the unique, we are not likely to succeed in our objective of prevention till at least one and possibly more pandemics have been studied by modern techniques. And, unless all our current experience is wrong, the answer is most likely to be drawn from an understanding of the processes and limitations of variation in influenza virus.—Frank Macfarlane Burnet, M.D., Reproduction and Variation in Influenza Viruses, *Bulletin of the Johns Hopkins Hospital,* February, 1951.

investigators have been successful in isolating the organisms from aspirated sternal bone marrow when venous blood withdrawn simultaneously has remained sterile. This procedure is recommended. Up to 2 or 3 cu. ml. of marrow may be withdrawn. The site for the needle puncture should be infiltrated with procaine (novocain®) hydrochloride prior to introduction of a 19 gage needle fitted to a syringe. Brucella organisms may be cultured from excised lymph nodes, particularly in patients with long-standing disease. This procedure should be attempted in persons whose marrow and venous blood cultures have remained sterile. Organisms are more likely to be obtained from cervical nodes that enlarge during febrile relapses.

Brucella organisms have been cultured occasionally from arterial blood obtained shortly after the administration of epinephrine. Because the organisms sometimes localize in tissues and organs and cause chronic inflammation, cultural studies are often indicated for excised tissues, and for excretions and secretions. Brucellosis is occasionally associated with chronic cholecystitis, and bile obtained by duodenal drainage should be cultured. The organisms have been isolated from the urine of patients with chronic pyelonephritis. Granulomatous tissue of unknown etiology excised from bone or lung should be cultured for Brucella. Finally, brucellosis may be a cause of chronic meningitis, and the organisms should be sought for in cerebrospinal fluid.

METHODS OF CULTURE

There are several methods for culturing Brucella. Each has certain advantages and disadvantages. No one method will be entirely satisfactory under all circumstances. The recommendations being offered have proved to be of the most practical value in several laboratories.

The most suitable mediums for blood cultures are "trypticase-soy" broth and "Albimi" Brucella medium. A solution of 1% sodium citrate may be added to either medium, which is dispensed in 75 ml. quantities in cultural bottles stoppered with cotton, and then sterilized. Five to 10 ml. of the patient's blood is added aseptically, and the bottle is incubated at 37 C in a closed jar. Ten per cent of the atmosphere in the jar is replaced by carbon dioxide, which is essential for almost all strains of Brucella abortus. The cotton plugs are recommended in the culture bottles in order to permit a free exchange of gases. Subcultures should be made on the fourth day on the surface of "trypticase-soy" agar plates or "Albimi" agar plates, and at regular intervals thereafter unless growth occurs. The plates should be incubated in a closed jar containing an atmosphere with 10% of carbon dioxide. The initial cultures should be kept for one month before they are discarded.

As an alternative cultural method, the Castaneda technique may be employed in which agar is layered on one of the narrow sides of a rectangular bottle prior to the addition of broth that has been previously sterilized. Then, instead of making frequent subcultures, the bottle is tipped at 48 hour intervals to allow the broth to flow over the exposed surface of the agar. Brucella colonies may frequently be detected growing on the surface of the agar within a week. This method avoids the danger of contamination of the culture while making transfers to agar plates, and also reduces the hazard of infecting the technical personnel. The method of subculture, however, usually allows earlier recovery and identification of the culture, and in many instances has proved superior in recovering the more fastidious strains of Brucella.

A rubber stopper may be employed in the culture bottle instead of a cotton plug, and the added carbon dioxide tension may be provided by introducing the carbon dioxide directly into the culture bottle by needle puncture. While many strains of Brucella may be cultured in this matter, some strains will not grow under these circumstances due to the limitation of the oxygen supply. However, an occasional strain prefers a slightly reduced oxygen tension for multiplication.

In some laboratories it is not possible to obtain venous blood directly from patients for cultural purposes. But these laboratories do have specimens of clotted whole blood submitted to them for agglutination tests. Under these circumstances, after the serum has been withdrawn, the clot may be broken up and cultured for Brucella in liquid medium. While Brucella organisms can be isolated in this manner, this method is not as satisfactory as obtaining blood directly from the patient and placing it immediately in culture media. The cut surfaces of specimens of tissue may be smeared directly on solid agar mediums for cultural purposes.

The guinea pig has been widely used in the past for recovery of Brucella from specimens. Cultural techniques are now superior to guinea pig inoculation for the detection of Brucella except when such specimens are derived from a highly contaminated source. The developing chick embryo offers an excellent environment for the growth of Brucella. The fertilized chicken egg has been used successfully for isolation of Brucella from blood, blood clots, and cerebrospinal fluid. At the present time, this method cannot be recommended as a routine procedure, but may be utilized in properly equipped and staffed laboratories as a supplement to the foregoing cultural methods.

THE AGGLUTINATION TEST

With the increased tendency to employ antibiotics for febrile conditions of unknown etiology, the agglutination test is being depended on more and more for the diagnosis of brucellosis. In many instances the antibiotic may be sufficient to sterilize the blood stream but inadequate to eliminate the infection. The accumulated experience of investigators over many years has demonstrated that the agglutination test, if properly performed, is an invaluable diagnostic aid. It is to be recalled that in the classical and highly informative studies on human brucellosis carried out by the Mediterranean Fever Commission the agglutination reaction was clearly demonstrated to be quite dependable as a diagnostic procedure.

The reliability of the agglutination test depends on the antigen that is used. Due to the tendency of Brucella to undergo dissociation with concomitant change in agglutinability, the agglutinating properties of cultures may vary greatly. By selecting relatively stable strains with continued effort to maintain the smooth characteristics of the culture, standardized, dependable antigens can be prepared. These facts have long been recognized in veterinary medicine, and for a number of years a standardized antigen prepared by the Bureau of Animal Industry of the Department of Agriculture has been used for testing animals. The success of the program for the control and eradication of brucellosis in domestic animals is due in great part to the use of this standardized antigen and a standardized test procedure.

In human medicine there has not been general recognition of the problems involved in the agglutination test, and a standard antigen has not been universally employed. There is a wide variability in the antigens and test procedures being used, with accompanying variability in test results. In several surveys, it has been found that when the same serums are tested in a number of different laboratories, it is usual to find wide variation in the test results. A serum may be assigned a relatively high titer in one laboratory and in another agglutinations may not be detected. This situation is largely due to the use of unsuitable antigens, and to the lack of uniform standardization of the antigen and of test procedures.

INTERPRETATION OF THE AGGLUTINATION TEST

As a result of critical studies in a series of culturally proved cases carried out in some clinics in the United States, certain statements can be made concerning the agglutination test. The clinician cannot depend on a so-called "diagnostic titer." In general, the higher the titer of agglutinins the more likely it is that it represents an infection. The great majority of culturally proved cases are associated with a titer of 1:100 and above. Agglutinins may often be demonstrated when the serum is diluted 10 to 20 thousand times. It is only an occasional case in which Brucella organisms can be isolated from the patient when agglutinins cannot be demonstrated at the same time. Such authentic cases are few in number. It has been shown that in endemic areas of animal and human brucellosis in the United States, a considerable number of healthy human adults have a low titer of Brucella agglutinins. This factor is so significant that titers of less than 1:100 are of questionable diagnostic significance in most of the suspected cases. In groups repeatedly exposed to Brucella, such as farmers, meat packing plant employees, and veterinarians, even the higher titers lose diagnostic significance because so many of these persons are encountered with titers of 1:320 or higher without being ill.

Cross agglutination occurs with Pasteurella tularensis and Vibrio comma. Persons immunized against cholera develop agglutinins for Brucella, often in high titer, owing to a common antigen (H. antigen of cholera). Such agglutinins may be differentiated from Brucella-induced agglutinins by reciprocal absorption tests, since the cross antigenicity is not complete.

Only a small percentage of P. tularense strains show a marked antigenic cross with Brucella. Usually the agglutination titer is higher against the responsible organism, and the clinical characteristics of tularemia are so distinct that there is no great problem of differentiating these two diseases.

After recovery from brucellosis, titers of variable degree may persist for years. In general, after a year recovery is associated with a drop in agglutinin titer. The titer often is less than 1:100 at that time or may become so at a later date. Occasionally agglutinins may disappear entirely. A state of good health after recovery is occasionally associated with a high titer of agglutinins. For practical purposes, therapy with the antibiotics does not interfere with the diagnostic value of the agglutination test. A gradual diminution in the titer of agglutinins over a period of weeks or months occurs in persons successfully treated with the antibiotics. The persistence of agglutinins in the serums of patients who are feeling well after treatment does not necessarily indicate the presence of an active infection.

Therapy with Brucella antigen may provoke the appearance of agglutinins, which may confuse the interpretation of the test for months or years. The injection of Brucella antigen intradermally may result in a high titer of agglutinins in healthy persons even if the site of the injection shows no reaction. It is unreliable for diagnostic purposes to interpret a rising titer of agglutinins as indicating brucellosis shortly after a skin test has been performed.

AGGLUTINATION TEST TECHNIQUE

Various antigens and techniques have been devised for performance of a rapid slide or plate agglutination test. Such tests have usually been standardized to yield results comparable with the standard test tube dilution method. The results have proved far more variable than in the latter test, and the range of titer which can be investigated is restricted to the lower dilutions. A rapid test is of value in obtaining immediate presumptive results. It is recommended that its use be restricted to this purpose and that the final accepted titer of every serum tested be determined by use of the usual test tube dilution method.

It is not our purpose to report in detail the preparation of a dependable antigen for the tube-dilution agglutination test. A satisfactory antigen is not available commercially. Dependable antigens now in use are being prepared by individual laboratories. There is an urgent need for a readily available and standardized antigen. Experience has indicated that such an antigen may be made from a completely smooth culture of any of the three species of Brucella. The organisms should be grown on a solid medium, such as liver-infusion agar or potato-infusion agar; harvested by washing them off with saline solution; centrifuged and resuspended in saline solution; and killed by the use of heat, formaldehyde ("formalin") or phenol. Standardization is performed by turbidimetric methods (photoelectric colorimeter), and then the antigen is tested against serums of known titer, comparing it with a previously prepared lot of satisfactory antigen. If the results disagree, the lot should be discarded.

Not only is there a need for a standardized antigen but also for a standardized method for performing the agglutination test. The following procedure has proved satisfactory in several laboratories:

Three to 4 ml. of venous blood are collected aseptically in a sterile tube and allowed to clot, and the serum is removed after centrifugation. For each serum to be tested 10 tubes (13 by 100 mm.) are placed in a rack, 0.9 ml. of isotonic sodium chloride solution is added to the first tube, and 0.5 ml. to the remaining nine tubes. Using a serologic pipet of 1 ml. capacity, which is calibrated to 0.1 ml., 0.1 ml. of the serum to be tested is added to the first tube. The mixture of sodium chloride solution and serum is drawn up and expelled from the pipet seven or eight times. Then 0.5 ml. is transferred from the second to the third tube, and so on down through the tenth tube. An additional tube containing only 0.5 ml. of isotonic sodium chloride solution may be used as a control. To each tube is added 0.5 ml. of antigen (such as Br. abortus tube antigen prepared by the Bureau of Animal Industry, U. S. Department of Agriculture, Beltsville, Md.). The contents in each tube are mixed, and for optimal results incubation is carried out in a water bath for 48 hours at 37 degrees C. The end point or agglutinating titer of the serum varies from laboratory to laboratory, and, here again, standardization is necessary. The end point may be taken as that tube with the highest dilution of serum showing complete clumping of the organisms in the bottom of the tube with a clear supernatant fluid. Another end point may be that tube with the highest dilution revealing approximately 50% clumping of the bacterial cells. The 1st tube in the rack represents 1:20 dilution of serum, the 2nd 1:40, through the 10th tube, which represents a 1:10,240 dilution. In occasional cases of active infection, and in many cases in which patients have convalesced satisfactorily, the serum will produce less than 50% agglutination. Such serums should be reported as showing only partial agglutination.

A serum may occasionally display the prozone phenomenon, in which the organisms are not agglutinated by the lower dillutions of serum. This zoning rarely extends beyond a dilution of 1:160 or 1:320, and the effect is overcome by diluting out the serum to the extent described above. Failure to demonstrate the clumping of organisms in the lower dilutions of serum may be associated with "blocking antibodies." However, for practical purposes, if this does occur, it would appear that agglutination is prevented only in dilutions well below 1:160, and, therefore, this would not interfere with the detection of an active case of brucellosis.

COMPLEMENT FIXATION AND OPSONOCYTOPHAGIC TESTS

The results obtained with the complement fixation test are in general agreement with those obtained with the agglutination test. It has no advantage over the latter test and is more cumbersome to use, and the results are more easily influenced by small errors in technique. For these reasons the complement fixation test is not recommended for routine use.

The opsonocytophagic test is a complicated test, which, to be of value, must be precisely controlled. Slight variation in the test culture may render the results worthless. It must be performed shortly after the blood is drawn. It is not a practical test for routine use. The information which this test provides is of slight value in the diagnosis or in the management of a case. The test is not recommended for use.

DERMAL SENSITIVITY TEST

Numerous antigens and techniques have been proposed for determining the dermal sensitivity of man for Brucella. No matter how it is performed, the results of such a test can only be interpreted as a measurement of specific sensitization to Brucella. A positive reaction does not indicate the presence of active infection. It has essentially the same significance as the tuberculin reaction.

The incidence of dermal sensitivity in a population is directly proportional to the amount of infection that is present among domestic animals in an area. In different parts of the United States from 10 to 25% of healthy adults give a positive reaction to this test. These individuals have at some time in the past been exposed to Brucella sufficiently to become sensitized, with or without ever having had clinically recognizable brucellosis. In the majority of such persons a history of disease resembling brucellosis cannot be elicited at any time in the past. It is apparent, then, that millions of healthy Americans will show a reaction to a Brucella dermal sensitivity test. In known infected persons there is no correlation between the severity of the infection and the degree of sensitivity. The dermal test does not diagnose Brucella infection, it is not a definitive aid in diagnosis of the disease, and performing such a test serves little useful diagnostic purpose. A small proportion of persons do not develop dermal hypersensitivity when exposed or infected. Furthermore, in the early weeks of infection this test will be negative, so that even a negative reaction does not exclude present or past infection, or even exposure to the disease. As a diagnostic procedure this test should be abandoned. Since the dermal reaction is specific for Brucella, the test does have some merit as a tool for epidemiological surveys to detect the degree of exposure of a population to brucellosis.

It is not within the scope of this report to discuss the therapy of human brucellosis. Nevertheless, it is common to establish a definite diagnosis of brucellosis on the basis of a positive dermal reaction, if the symptomatology of the patient is compatible with brucellosis, regardless of serologic and bacteriological results. Having established a diagnosis of brucellosis by these means, it is common practice to attempt desensitization of the patient with one of several Brucella preparations. The committee does not believe that a group of nonspecific symptoms and a positive skin test are sufficient evidence for the diagnosis of brucellosis, and the members do not subscribe to the treatment of brucellosis by desensitization with Brucella antigens.

RECOMMENDED LABORATORY CRITERIA FOR THE DIAGNOSIS OF HUMAN BRUCELLOSIS

The only absolute proof for the diagnosis of brucellosis is isolation of Brucella from the patient. A presumptive diagnosis can be reasonably, though not absolutely, confirmed by the results of the agglutination test if the titer is 1:320 or higher. It is assumed that the agglutination test has been done with a dependable antigen, and incubation of the serum-antigen mixture has been carried out at 37 C for 48 hours. It is also assumed that the possibilities of cross reactions have been considered. While the initial titer during the early stages of an illness may be lower than 1:320, a rising titer during the course of the illness has considerable significance.

GENERAL RECOMMENDATIONS

The dermal sensitivity test is of no aid in the diagnosis of a suspected case of brucellosis. Its indiscriminate and uncritical use has resulted in confusion among clinicians. The use of this test in clinical medicine should be abandoned. A standardized and reliable Brucella antigen for the agglutination test in human brucellosis should be made readily available for all laboratories. The universal adoption of such an antigen would improve considerably the dependability and usefulness of the agglutination test in the diagnosis of brucellosis.

The Medical School, University of Minnesota (Dr. Spink).

HUMAN BLOOD OPSONIN TITERS AGAINST BRUCELLA

Joseph Victor, M.D., Abou D. Pollack, M.D., Jeanne R. Valliant, A.B.
and
Ruth Raymond, A.B., Frederick, Md.

During experiments concerned with natural resistance it was found that the blood of dogs, animals with low susceptibility, had intense bactericidal action for Brucella, requiring the combined action of leukocytes and plasma.[1] To study the role of phagocytosis in this reaction, it was necessary to distinguish between phagocytic and opsonic activity. From studies on phagocytosis, a method evolved that measured the opsonin titer of liquids.[2]

Studies were carried out with the blood of dogs and then with human beings concerned with these studies, the latter having negative skin tests and agglutinin titers for brucellergin and Brucella, respectively; however, the opsonin content of the blood of the human beings increased during the course of the studies. Furthermore, the opsonin content of the blood of dogs that had never been in the laboratory was lower than that of those employed for Brucella studies.[2] Suspecting that the opsonin titers of well subjects free from symptoms and signs of brucellosis might be elevated because of contact with the organisms, we searched for a population free of contact. Many persons who had no known contact with Brucella showed higher plasma opsonin than others of the same group. A normal base line was sought in a human population free of possible contact with Brucella. Finally, opsonin titers were studied in persons ill or recovered from brucellosis.

Attempts to relate phagocytic and opsonic activity to the clinical state of patients have been made by many investigators. The most widely used technique, described by Huddleson, Johnson, and Hamaan [2a] and called by them an opsonocytophagic test, has been applied to brucellosis, pertussis, plague, tuberculosis, typhoid, and diphtheria, as well as to phagocytic studies with many other varieties of microorganism. In the opsonocytophagic test, an attempt was made to limit "normal" phagocytosis by adding 0.8% sodium citrate to blood. This concentration used in Huddleson's laboratory was found to be too low for inhibiting normal phagocytosis by Castaneda [3] and Tovar.[4] Apparently there is a difference of opinion as to the phagocytic capacity of normal blood, because no investigator has demonstrated the normal range of phagocytosis of a specific organism such as Brucella. Without a base line, the significance of a pathological alteration is difficult to interpret. Furthermore, the test did not distinguish between opsonic and phagocytic capacities of blood. Our studies on opsonization and phagocytosis have indicated that citrate inhibits both functions.[2] Quantitative measurement of opsonin can be carried out only under conditions that would not influence phagocytic activity and vice versa. In the Huddleson test there is no provision for control of either factor quantitatively except the citrate, which affects both functions to a different degree. Recently, Jersild [5] modified the Huddleson test by titrating serum of a patient in serial dilutions with citrated blood of a presumably normal subject. In this way opsonization was uninhibited in the serum but phagocytosis was inhibited by citrate. Like Huddleson, Jersild counted the number of Brucella organisms phagocytosed by 25 polymorphonuclear neutrophils. Attempts to count Brucella organisms within polymorphonuclear neutrophils have been unsuccessful in our laboratory.[2]

The method for quantitative determination of opsonins in serum and in heparinized plasma is described elsewhere.[2] This method controls various physical and physiological factors influencing phagocytosis of Brucella, such as number of organisms, strain characteristics, agitation, time, temperature, type of leukocyte, and the variability of the measurement of phagocytosis. The advantages of the method are: 1. Phagocytosis and opsonization are not inhibited. 2. The opsonin concentration can be determined by serial dilutions of the plasma. The proportion of polymorphonuclear leukocytes that phagocytosed Brucella organisms is determined by observations of at least 50 neutrophils. No counting of phagocytosed bacteria is necessary. 3. A positive test is defined as one in which 94 to 100% of neutrophils phagocytose Brucella organisms. This is reproducible in 996 times out of 1,000. 4. The procedure is safe, since Brucella organisms killed with 40% formaldehyde solution ("formalin") are as satisfactory in the test as living Brucella organisms.

MATERIALS

Normal Persons with Improbable Contact with Brucella.—Ninety subjects between the ages of 6 months and 18 years were studied in the Children's Clinic of the Philadelphia General Hospital. Their health histories were known, since they were born at the hospital. They had never left the city. At all times they had followed the diets prescribed by the clinic. An additional child, aged 6, who was examined in this series has been excluded. A recheck made after the test revealed that this child had lived on a farm between the ages of 3 to 18 months.

Normal Persons with Negative Contact History and Negative Skin and Agglutinin Tests.—This group was selected because the persons stated that they had lived in cities, although occasionally they had visited rural areas. As far as they knew, they had not had raw milk, nor symptoms such as fever, joint or muscle pain, or malaise of undiagnosed etiology, nor had they worked in a labo-

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From the Chemical Corps Biological Laboratories, Camp Detrick.

Dr. S. O. Waife made some of the subjects for this study available.

1. Victor, J.; Wells, E. B.; Clements, J., and Pollack, A. D.: The Bactericidal Action of Dog Blood Against Br. Suis, J. Infect. Dis., to be published.

2. Victor, J.; Pollack, A. D.; Raymond, R., and Valliant, J.: Determination of Blood Opsonin for Brucella, to be published.

2a. Huddleson, I. F.; Johnson, H. W., and Hamaan, E. E.: Study of Opsono-Cytophagic Power of Blood and Allergic Skin Reaction in Brucella Infection and Immunity in Man, Am. J. Pub. Health 23:917-929, 1933.

3. Castaneda, M. R.; Tovar, R., and Velez, R.: Studies on Brucellosis in Mexico: Comparative Study of Various Diagnostic Tests and Classification of Isolated Bacteria, J. Infect. Dis. 70:97-102, 1942.

4. Tovar, R. M.: Opsonization Test in Brucellosis, J. Immunol. 49:203-207, 1944.

5. Jersild, M.: Cytophagic Reaction Employed in Diagnosis of Brucella Infection, J. Infect. Dis. 68:16-19, 1941.

ratory with Brucella. Of 28 subjects in the group, 25 had negative skin tests and no agglutinins.

Persons with Positive Contact with Brucella.—These persons have been classified into four subgroups, as follows: 1. A group of well persons with positive contact histories, negative skin tests, and no agglutinins. These persons were from our laboratory personnel. Skin tests and agglutinin titers were determined in these subjects at 6 month intervals. 2. A group of well persons with positive skin or agglutinin tests. These persons had negative histories yet had been exposed to Brucella and had positive skin tests and elevated titers at the time of these studies. 3. A group of 17 persons who had recovered from brucellosis. Four of these had had positive blood cultures during brucellosis. All had recovered at the time of the opsonin studies. Agglutinin titers and skin tests were made in most of these persons. 4. Patients with brucellosis. These subjects gave evidence of fever, prostration, muscle and joint swelling, aches and pains, chills and sweating, positive blood cultures, or elevated agglutinins.

Solution for Washing Blood Cells and Diluting Plasma.—The Krebs-gelatin solution used was a modified Krebs solution [1] prepared as follows:

Parts	Solutions
50	"Knox Gelatin" P-20, 6% gelatin in 0.9% NaCl
50	0.9% NaCl
4	1.15% KCl
3	1.22% $CaCl_2$ (5 ml. was equivalent to 11 ml. of 0.1 N $AgNO_3$)
1	2.11% KH_2PO_4
1	3.82% $MgSO_4.7H_2O$
4.6	5% $NaHCO_3$

Brucella for the Opsonin Test.—Brucella suis PSIII, a smooth virulent strain, was grown for 18 hours on tryptose agar slants and harvested in tryptose sodium chloride solution. They were counted from calibrations of optical density in a Coleman spectrophotometer. They were treated with 1% formaldehyde for 24 hours at room temperature. The formaldehyde was then removed by three washings, each with 10 ml. of 0.9% sodium chloride. The final saline suspension was kept in the refrigerator at 5 C and remained usable for at least two months.

METHOD

Opsonin titer was defined [2] as the lowest concentration of plasma in which 94 to 100% of polymorphonuclear neutrophils phagocytose bacteria. An opsonin "unit" is the quantity of opsonin that permits phagocytosis by 94 to 100% of neutrophils under the defined conditions.

The test is carried out by mixing 0.1 ml. of heparinized blood containing 1 mg. of heparin in 10 ml. of blood with 0.1 ml. of Krebs-gelatin solution containing 1×10^9 formaldehyde-killed Br. suis PSIII. The mixture is rotated 24 to 36 times a minute for 30 minutes at 37 C. Smears on glass slides are stained with Jenner-Giemsa stain. If the smears showed phagocytosis by 94 to 100% of 50 neutrophils, the opsonin titer was determined as follows. Blood cells previously washed six times, each time with 10-fold volumes of Krebs-gelatin solution, were mixed with equal volumes of dilutions of plasma in Krebs-gelatin solution. This mixture of washed blood cells and diluted plasma was added to the suspension of Br. suis PSIII. When mixtures containing gelatin were employed, the glass slides were warmed to facilitate spreading of the smear. The results show that the presence of one opsonin unit in 0.1 ml. of blood represents a positive test.

RESULTS

Normal Persons Whose Contact with Brucella Was Highly Improbable.—Table 1 summarizes the results in 90 subjects who had no known contact with Brucella and presumably had no opportunity for contact. The range and incidence of phagocytic neutrophils are recorded for different age groups. In the relatively small number of cases there was no significant difference among different age groups. Phagocytosis by less than 40% of the neutrophils occurred in 88% and by less than 80% in 97% of the subjects. No subject showed phagocytosis by 94 to 100% of the neutrophils of the blood. The combined data clearly indicate that in a population that presumably had no contact with Brucella all of the subjects under these conditions had an opsonin titer of less than 1.

TABLE 1.—*Range and Incidence of Phagocytosis in Children with No Contact with Brucella*

	Neutrophils Containing Brucella suis PSIII, %				
Age, Yr.	No. of Subjects	0-40	41-80	81-92	94-100
½-1	16	15	1	..	..
1-5	31	27	3	1	..
6-10	29	24	3	2	..
11-18	14	13	1	..	..
Total	90	79	8	3	..
% Total	..	88	9	3	0

Normal Persons with Negative Contact Histories and Negative Skin and Agglutinin Tests.—The percentage of neutrophils showing phagocytosis of Brucella was determined in whole blood. Titration of plasma was not carried out. Of 28 subjects, the blood of 9 showed 94 to 100%, 5 had 81 to 90%, 8 had 41 to 80%, and 6 had 40% or fewer phagocytic neutrophils. In the Philadelphia studies in which subjects were free of contact, none showed phagocytosis by 94 to 100% of neutrophils, while 33% of the present group showed phagocytosis by 94 to 100% of the neutrophils. Therefore, phagocytosis by 94 to 100% of neutrophils was considered a positive opsonin test.

TABLE 2.—*Opsonin Titers of Persons with No Symptoms but with Signs of Contact with Brucella, Such as Positive Skin Tests or Agglutinins*

Subject	Date	Opsonin Titer	Date	Skin Test	Date	Agglutinin Titer
B	11/15/48	10^2	2/24/48	4+	12/ 7/48	100
H	12/ 1/48	10^1	8/30/48	2+	8/30/48	50
L	1/25/49	10^2	3/15/48	0	11/ 1/48	3,200
N	1/28/49	10^3	10/28/48	+	1/11/49	400
A	3/ 7/49	1	3/ 2/49	2+	3/ 2/49	0

Brucellergin skin tests performed in 25 of the subjects were negative. High or low opsonin values were found both before and after skin testing. After the test, these subjects were questioned again about possible contact with raw milk. Of nine with positive opsonin tests and negative skin tests, six recalled having drunk raw milk on rare occasions. Two subjects with negative opsonin tests remembered they had consumed raw milk. Two other subjects, who had not had skin tests previously, had negative opsonin tests. They had positive brucellergin skin tests and no agglutinins when subsequently tested. Later both subjects showed positive opsonin tests. These observations emphasize the difficulty of defining a normal population with respect to immunologic changes in brucellosis.

Well Persons with Positive Contact Histories, Negative Skin Tests, and no Agglutinins.—In this group were 24 persons from the laboratory engaged in Brucella studies. None had ever had any symptoms of brucellosis. Fifty-five opsonin tests were performed. Nineteen subjects had opsonin titers of 1, and three had titers as high as 10. Repeated opsonin tests were made on most of the subjects. Six had opsonin titers of less than 1, which later rose to 1. Two were tested from five to eight times over a period of more than a year and showed opsonin titers alternating between 1 and 10; two others similarly tested repeatedly showed opsonin titers of 1. Repeated skin and agglutination tests were negative in all. In these 24 persons with positive contact histories, 92% had opsonin titers of 1 or more. In summary, a positive opsonin test occurred in 92% of persons with positive contact history, in 33% with a negative contact history, and in none with no contact. Despite the differences between these three groups, there were no differences in skin or agglutinin tests.

TABLE 3.—*Opsonin and Agglutinin Titers and Skin Tests in Seventeen Subjects Recovered from Brucellosis*

Opsonin Titers	No. of Opsonin Tests	Agglutinin Titers	Skin Tests
1	3	40-800	1-4+
10	10	25-400	0-5
40	1	50	1
60	1	800	2
100	4	100-400	1-4
400	1	100	3
Total	20	25	21

Well Persons with Positive Contact Histories and Positive Skin or Agglutinin Tests.—Table 2 records data on five subjects without apparent illness. These subjects revealed positive skin tests or agglutinin titers, which have been tabulated with the opsonin titers. Opsonin titers ranged from 1 to 100, skin tests from 0 to 4+, and agglutinin titers from 0 to 3,200. There was no quantitative relation between the opsonin and agglutinin titers or the skin tests.

Persons Who Had Recovered from Brucellosis.—Seventeen subjects had recovered from brucellosis as judged by clinical observation, skin tests, and agglutinin titers. Symptoms had subsided one month to four years before the opsonin tests were performed. Previously, a number of these subjects had occasional exacerbations, with joint pains, slight fever, or malaise. Table 3 shows that the range of opsonin titers was between 1 and 400. Skin tests were positive in all but one subject. They were graded 0, doubtful ±, to very severe, 5. Agglutinin titers ranged from 25 to 800. There was no correlation between the opsonin, skin, or agglutinin reactions. The data from this group resemble those of subjects with positive skin tests and agglutinins but no clinical histories of brucellosis.

Persons with Brucellosis.—Fifteen patients were observed while they had active brucellosis. Each subject had 2 to 13 opsonin tests. The earliest opsonin titers were obtained one day after the onset of illness. All 85 opsonin tests were positive, with titers ranging from 1 to 10^7. Details of the illness of a patient with positive blood cultures are recorded in table 4. Of the 15 subjects, 8 had positive blood cultures during the illness. The highest opsonin titers were observed in subjects with positive blood cultures but not usually at the same time as the positive blood cultures. The opsonin titer was not related quantitatively to the agglutinin titer (table 5). It appears from the few cases that have been observed that the highest opsonin titers were in those with the most prolonged illnesses and that they occurred after two to three months of illness. After recovery the opsonin titer persisted between 1 and 10^2 for up to 450 days.

TABLE 4.—*Laboratory and Clinical Findings During Brucellosis in One Patient*

Day of Illness	Opsonin Titer	Agglutinin Titer	Blood Culture	Clinical Findings
3	...	...	—	Tired, cough
6	...	800	..	
8	...	200	+	Fever, headache, cough
9	...	200	+	Fever
13	...	800	—	
17	...	3,200	—	Afebrile, maximum
22	...	1,600	—	Temperature 97.4 F for 21 days
31	...	1,600	..	
44	...	1,600	..	Temperature 102 F, chest pain, nasal discharge, cough, improved
47	...	...	..	Temperature 102 F, malaise
55	...	...	—	Ill, chills
58	10^7	800	—	Afebrile
60	...	800	—	Temperature 99.2 F, improved
71	10^6	...	..	
90	10^2	1,600	..	Temperature 103 F, cough, aching
121	...	...	..	Ill for 11 days
124	10^7	400	..	
132	10^7	800	+	
134	...	...	—	Afebrile
140	10^4	...	..	Fatigue persisted
152	10^3	800	..	
159	10^2	800	..	
166	10^2	400	..	
174	10^2	400	..	
181	...	400	..	Tired, aching, temperature 99.4 F, for 2 days
194	10^2	400	..	Slight fatigue
208	10^2	400	..	Well
236	10	400	..	

Significance of Opsonin Titers.—Summaries of the studies of opsonin titers of blood from persons with different histories of contact with Brucella are recorded in table 6, which records both the percentage of tests with various opsonin titers in each group as well as the percentage of cases with the highest opsonin titers in each case. Persons known to have had contact but without any other immunologic signs, such as positive agglutinin or skin tests, showed higher opsonin titers than those without contact; persons with positive contact histories and positive skin and agglutinin tests generally had higher opsonin titers than those in the group just mentioned and indistinguishable from those who had recovered from brucellosis.

TABLE 5.—*Opsonin and Agglutinin Titers of Same Blood in Brucellosis*

Opsonin titer	1	10	10^2	10^3	10^4	10^5	10^7
Agglutinin titer	25 to 1,600	100 to 6,400	0 to 25,600	400 to 12,000	100 to 800	800	400 to 1,600
No. of comparisons	8	23	20	8	3	2	5

Since no subject after recovery from illness showed a titer above 100, an opsonin titer of 10^3 appears to be diagnostic of active brucellosis; however, in the small number of cases studied, only about half of the patients with active cases had opsonin titers high enough to be diagnostic.

In several cases of active brucellosis opsonin titers ranged to 10^7. Opsonin titers were highest when symptoms were severest. After recovery, opsonin titers decreased. These results confirm the findings of Castaneda, Tovar, and Velez that the Huddleson test often showed decreased phagocytosis with recovery from brucellosis.[3]

COMMENT

In many respects the results obtained with this opsonin test were at variance with those described by Huddleson, Johnson, and Hamaan.[2a] According to their technique with citrated blood, normal subjects showed no phagocytosis, infected subjects revealed moderate phagocytosis with positive skin tests with or without serum agglutinins, and "immune" subjects gave marked phagocytosis with positive skin tests with or without serum agglutinins. Further differences were noted between the results in our test and those described by Jersild,[5] who observed inhibition of phagocytosis in undiluted serum of high opsonin titer (prozone phenomena) and high phagocytosis with dilutions of serum up to 6×10^5. In 25 tests with opsonin titers of 10^3 or over, we found no prozone phenomena. In our test 2.5 times more plasma was used than in Jersild's test. In our experiments, plasma was not titrated beyond 10^7. Blood cells were washed six times, each washing with 10-fold volumes of Krebs-gelatin solution. Assuming that each washing diluted the plasma 20 times, six washings would have diluted the plasma approximately 6.4×10^7 times. When phagocytosis was observed in cells that had been washed six times, it was assumed that the opsonin titer was greater than 10^7. Therefore, titration was not carried beyond 10^7, although it might have been possible to do so if the cells had been washed oftener.

It has been stated that in certain immune states cells develop a phagocytic capacity independent of opsonins. Lurie [7] found in tuberculous guinea pigs and Huddleson and Munger [8] found in brucellosis that white blood cells washed once with saline solution showed greater phagocytic activity than those of normal guinea pigs. The amount of washing was limited because of the tendency toward hemolysis owing to the saline. Our experiments show that limited washing of cells might leave enough opsonin in the system to permit phagocytosis in blood from immune animals while removing it from the blood of normal animals.

The specificity of Brucella opsonins was demonstrated by comparing opsonin titers for Shigella dysenteriae, Neisseria gonorrheae, and Br. suis PSIII. In blood with opsonin titers up to 10^7 for Br. suis PSIII, the opsonin titers for Sh. dysenteriae and N. gonorrheae were 1 or less. On the other hand, certain variants of the strains of Br. suis produced differences in the opsonin titer. For example, a rough variant of Br. suis was isolated from a patient during the course of the infection. The opsonin titer for this variant in this patient and in five other subjects was greater than 10^7. At the same time, the opsonin titer for the smooth strain of Br. suis PSIII in this patient and in the other subjects ranged from 1 to 10^2. This influence of phase variation on phagocytosis of Brucella resembles that described for strain variation by Munger and Huddleson,[9] Wise,[10] and Angle, Algie, and Morgan.[11]

TABLE 6.—*Opsonin Titers in Subjects with Different Contact Histories for Brucella*

					Opsonin Titer															
					Less than 1		1		10		10^2		10^3		10^4		10^6		10^7	
					Percentage Incidence															
Contact	Skin Test	Agglutinin Test	No. of Cases	No. of Tests	Cases*	Tests	Cases	Tests	Cases	Tests	Cases	Tests	Cases	Tests	Cases	Tests	Cases	Tests	Cases	Tests
Improbable	..	..	90	90	100	100	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Negative	0	0	28	28	67	67	33	33	..	..	..	..	..	..	..	..	..	..	..	..
Positive	0	0	21	55	8	16	79	78	13	6	..	..	..	..	..	..	..	..	..	..
Positive	0-+	0-+	5	5	0	0	20	20	20	20	60	60	..	..	..	..	..	..	..	..
Recovered	+	+	17	27	0	0	12	30	59	44	29	26	..	..	..	..	..	..	..	..
Brucellosis	..	+	15	85	0	0	0	19	14	32	33	20	20	15	20	5	0	3	13	6

* Only the highest titers for the cases are recorded.

Establishment of the normal opsonin content of blood for Brucella has been a prime object of this study. Veazie and Meyer [12] pointed out that positive Huddleson tests for phagocytosis of Brucella were observed in heparinized blood, while the same blood was negative if citrate was used as an anticoagulant. A major difficulty in obtaining a normal base line was the possible contact of test subjects with Brucella. Our experiments show that persons with no history of contact and negative skin and agglutinin tests varied considerably in the opsonin content of plasma; therefore, these criteria alone were insufficient to establish the base line. The 90 children who had never been out of Philadelphia yielded the lowest opsonin titers. Since there was no difference among the age groups, 6 months to 18 years, it is unlikely that age played a significant role. It is noteworthy that the highest opsonin level was found in a 6-year-old child who had had a possible contact with Brucella, for she lived on a farm between the ages of 3 and 18 months. At the time of the opsonin test, this history was not known. Since she had the only positive tests in the group, her parents were requestioned and the history of contact was elicited.

Even from adults who were carefully questioned about the possibility of contact, such as drinking of raw milk,

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[6] Deleted on proof.

[7] Lurie, M. B.: Studies on Mechanism of Immunity in Tuberculosis: Mobilization of Mononuclear Phagocytes in Normal and Immunized Animals and Their Relative Capacities for Division and Phagocytosis, J. Exper. Med. **69**: 579-606, 1939.

[8] Huddleson, I. F., and Munger, M.: Phagocytic Activity of Bone-marrow Cells, Proc. Soc. Exper. Biol. & Med. **35**: 27-29, 1936.

[9] Munger, M., and Huddleson, I. F.: Detection of Antigenic Variants of Brucella by Means of Opsonocytophagic Test, J. Bact. **35**: 255-260, 1938.

[10] Wise, N. B.: Evaluation of Brucella Opsonocytophagic Test, Am. J. M. Sc. **200**: 520-523, 1940.

[11] Angle, F. E.; Algie, W. H., and Morgan, D.: Brucellosis: Studies Emphasizing Strain Variation in Serologic Testing, J. Lab. & Clin. Med. **27**: 1259-1263, 1942.

[12] Veazie, L., and Meyer, K. F.: Heparin as Anticoagulant in Brucella Phagocytic Index Test, Proc. Soc. Exper. Biol. & Med. **32**: 1616-1619, 1935.

unreliable answers were obtained. When questioned again after a positive test, the parents of some of the adults supplied positive information about the subject's drinking of raw milk on occasions during childhood. Of course, it is not contended that drinking raw milk assures contact, but it increases the possibility. The results obtained with the opsonocytophagic test indicate the confusion that arises with respect to interpretation of what is pathological when the "normal" has not been clearly defined. It is hoped that the present studies have established a rational approach to the study of opsonin content of blood for Brucella.

SUMMARY AND CONCLUSIONS

An opsonin unit was defined as that quantity of opsonin causing phagocytosis by 94 to 100% of polymorphonuclear neutrophils under standard conditions. The opsonin titer measured the number of opsonin units in a unit of blood.

The "normal" opsonin titer was derived from a study of 90 subjects who had never been out of a large city. All titers in this group were less than 1. Opsonin titers ranged from less than 1 to 1 in other subjects who thought they had never had contact with Brucella and had negative skin and agglutinin tests. These titers ranged from less than 1 to 10 in persons who had positive contact histories but negative skin or agglutinin tests, and they ranged from 1 to 100 in persons who were well and who had not had clinical brucellosis but had positive histories of contact and positive skin or agglutinin tests.

In persons who had recovered from brucellosis and had positive skin or agglutinin tests opsonin titers ranged from 1 to 100, and in persons with clinical brucellosis they ranged from 1 to more than 10^7. Of 15 patients with brucellosis 8 had opsonin titers of 10^3 or higher during their illness. Since none of the well or recovered persons had opsonin titers greater than 10^2, an opsonin titer of 10^3 appears to be diagnostic of active brucellosis.

The normal opsonin titer can be obtained only from persons who had no contact with Brucella. Negative skin or agglutinin tests offer no assistance in defining such subjects.

EMERGENCY MEASURES AND PRECAUTIONS IN RADIUM ACCIDENTS

Eugene L. Saenger, M.D., Robert G. Gallaghar, B.A., David S. Anthony, Ph.D.
and
Peter J. Valaer, B.S., Cincinnati

The escape of radium salts from sealed containers has, in several instances, resulted in expenditure of from $50,000 to $100,000 by the institutions where such accidents occurred. These figures may seem exceedingly high. They include, however, the costs of decontamination, medical care, legal advice, lost production time, and replacement of equipment that could not be decontaminated. In some instances such an accident has resulted in serious contamination of the exposed persons because of the absorption, inhalation, or ingestion of radium salts.

On July 24, 1951, a platinum capsule containing 50 mg. of radium sulfate became opened at an industrial plant in Cincinnati. Within a few hours after the accident had been discovered, radium sulfate was spread rather widely throughout the plant. Several persons inhaled some of the radium at the time of the accident.

A careful survey of the medical literature showed no readily available source of information as to exactly what to do in the event of such an accident. We make suitable recommendations here, based on our experience and those of others, so that widespread exposure and contamination of persons and buildings may be minimized.

SIGNIFICANCE OF THE TYPE OF RADIUM SALT

When sealed radium sources are purchased, the chemical form of the radium is not usually specified. The characteristics of the different salts are of great importance in determining the metabolism of radium that may be ingested or inhaled. The important characteristics of the common salts of radium are summarized in the table. If, as in the Cincinnati incident, the radium is in the form of the sulfate coprecipitated with barium sulfate, the radon produced is trapped almost quantitatively.[1] Therefore, radon breath determinations are of uncertain value in measuring exposure to the sulfate. The insolubility of radium sulfate tends to permit less absorption in the body. Greater absorption of radium chloride and radium bromide can be expected after ingestion or inhalation.

SIGNIFICANT MEDICAL FINDINGS

In any type of accident involving the dispersion of up to 100 mg. of radium salt, there will be little or no likelihood of development of an acute gamma ray exposure syndrome. In the Cincinnati incident, where amounts of less than 0.2 μg of radium as the sulfate entered and remained in the body, and from 1 to 10 μg were deposited on the skin or ingested and excreted, there were no detectable abnormalities on careful physical examination within the first two months. There were no symptomatic complaints or detectable abnormalities in the blood counts of the persons who had been exposed. When radium is taken into the body, the resulting injury is due to the retention of long-lived alpha emitters.

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From the Radioisotope Laboratory, University of Cincinnati, College of Medicine; Division of Biology, Mound Laboratory; and Division of Occupational Health, U. S. Public Health Service.

Director, Radioisotope Laboratory, and Assistant Professor of Radiology, Medical College, University of Cincinnati (Dr. Saenger); Health Physicist, Division of Occupational Health, U. S. Public Health Service (Gallaghar); Director, Division of Biology, Mound Laboratory (Anthony); and Electronics Scientist, Division of Occupational Health, U. S. Public Health Service (Valaer).

[1] Hahn, O.: Applied Radiochemistry, Ithaca, N. Y., Cornell University Press, 1936, chap. 9.

CONSULTANTS WHO MAY BE CALLED

In the present atomic age, many local and state health departments have men available with some experience with radiation hazards. These officials should be notified immediately in the event of such an accident because of the important public health problems created.

There are also various governmental agencies and university laboratories that are especially qualified and interested in this problem and are, therefore, able to give emergency help. It is unlikely that all of these consultants would be immediately available for aid and consultation. Through one or more of these groups, however, an emergency program can be organized until more definite plans can be formulated. Following is a list of such consulting groups:

1. Division of Occupational Health, Field Headquarters, U. S. Public Health Service, Cincinnati, Ohio. Telephone number, Dunbar 2200.
2. Radiological Health Training Section, Environmental Health Center, U. S. Public Health Service, Cincinnati, Ohio. Telephone number, Dunbar 2200.
3. Health Physics Division of nearest Atomic Energy Commission installation.
4. National Bureau of Standards, Washington 25, D. C.

Characteristics of Radium Salts

Radium Salt	Appearance * to Human Eye	Solubility in Gm./100 Ml.†			Radon Released
		Cold Water	Hot Water	Alcohol, Acids	
Radium bromide ($RaBr_2$)	White; some transparency	Soluble	Soluble	Soluble in alcohol	Yes
Radium chloride ($RaCl_2$)	White; some transparency	Soluble	Soluble	Soluble in alcohol	Yes
Radium sulfate ($RaSO_4$)	White; some transparency	.000002 (at 25 C)	.000005	Insoluble in acids	No (when coprecipitated with Ba SO_4)

* Radium salts are identical in appearance to the corresponding salts of barium when observed by the naked eye. Since these salts must be ground so that they can be put into tubes and needles of very small diameter, their characteristic crystal structure is lost. In subdued light or total darkness these salts exhibit an intense blue fluorescence (Holm, W. W., and Taylor, T. W.: Personal communications to the authors).

† Handbook of Chemistry and Physics, edited by C. D. Hodgman, ed. 30, Cleveland, Ohio, Chemical Rubber Company, 1947.

PRECAUTIONS AND EMERGENCY MEASURES

Precautions to prevent escape of radium salts from their containers should include regular frequent inspection of the exteriors of radium capsules for alpha contamination. If the containers are kept on small pieces of cotton, the cotton pieces can be counted easily and no person need be exposed excessively in making wipe tests. Accurate records of the location and use of all radium capsules should be kept.

If a leak or actual disruption of a radium container occurs, the following measures should be taken at once: 1. No attempt to clean up the spill should be made. 2. All windows should be closed, fans shut off, and everyone should leave the room. 3. All doors should be closed and locked. 4. The entire door and all other holes leading into the room should be sealed with heavy wide masking tape or adhesive tape and heavy wrapping paper. 5. Every person who has been possibly exposed should remove his clothes and be decontaminated. 6. A consultant experienced in radiation hazards should be called. 7. The area should be declared off limits.

Under no circumstances should any untrained person attempt to inspect or clean up any spilled radium salt. (The clean-up technique should be planned with the care used in quantitative chemical analysis and in bacteriological handling of extremely virulent organisms.) Fans or ventilating apparatus should not be turned on in an attempt to blow out radon. Such a maneuver will only disseminate the radioactive material throughout the area. If radium is blown out of a building, air currents will probably carry the finely divided material into windows or air intake ducts on the floors above or below, or into adjacent buildings. Proper precautions taken immediately will save thousands of dollars and protect human life.

EMERGENCY CARE FOR POSSIBLY CONTAMINATED PERSONS

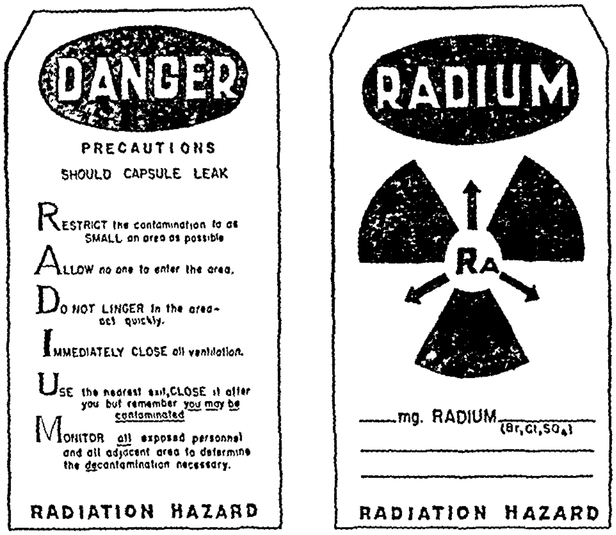
The immediate care of persons who may have been exposed to radiation should consist of the following measures.

1. All suspected persons should be surveyed for alpha and beta-gamma contamination if some type of monitoring instrument is available. 2. If no monitoring instrument is available, all possibly exposed persons should be regarded as contaminated. Wipes from various parts of the bodies of these persons and their clothing should be made with some type of disposable tissue, filter paper, or blotting paper, and the samples placed in separate, labeled envelopes for future study. 3. Exposed persons should remove all clothing carefully and place it in some type of disposable container or bag. This clothing should not be dropped on the floor or left lying in uncontaminated areas. 4. Exposed persons should then be covered with some type of emergency clothing and taken to a shower area for bathing. 5. Bathing should be done under showers with commercially available detergents and soaps. Highly alkaline soaps, abrasives, organic solvents, or cleaners that tend to increase permeability of the skin must not be used. The detergents should be alternated, and at least six separate washings of the entire body should be done. Special emphasis should be given to cleaning of fingernails, toenails, scalp, ears, and body folds. 6. Scrub brushes should be used but care should be taken that the skin surfaces do not become abraded. 7. After the body is well washed, the person should be surveyed with suitable monitoring instrument and additional smears taken with disposable tissues, cotton-tipped applicators, or filter paper. The ear canals and nostrils should be swabbed for alpha contamination. Smear tests are especially important if alpha survey instruments are not available. Fresh clothing should be put on. 8. Small cuts and other breaks in the skin surface should be sought for carefully, since absorption of radium can occur easily

by this route. Such areas should be decontaminated after the above washes by at least three five-minute scrubs after removal of scabs and crusts.

A physician should be called immediately to carry out the following medical studies on exposed persons.

1. Complete medical history and physical examination with special emphasis on previous occupational history and possible exposure to radiation should be secured. 2. Complete blood count, including hematocrit reading, and routine urinalysis should be done. 3. Urine should be collected for 72 hours for assay of radium. Each day's specimen should be put in a separate container. These specimens should be collected in bottles containing 10 ml. of 0.1% normal nitric acid for each 24 hour specimen (approximately 10 ml. of concentrated nitric acid per liter of water). An additional 10 ml. of concentrated nitric acid should be added after the collection is complete. 4. Feces should be collected for 72 hours for determination of radium content. Each day's specimen should be put in a separate container. (These may best be collected in round, 1 qt. [1 liter] ice cream containers.) 5. The breath should be analyzed for radon (flasks may be obtained from the National Bureau of Standards). 6. Surveys should be made for total body gamma radiation with a scintillation counter. 7. Blood should be taken in 20 ml. samples for determination of radium. 8. A chest roentgenogram should be made.



RESTRICT the contamination to as SMALL an area as possible

ALLOW no one to enter the area.

DO NOT LINGER in the area—act quickly.

IMMEDIATELY CLOSE all ventilation.

USE the nearest exit, CLOSE it after you but remember you may be contaminated

MONITOR all exposed personnel and all adjacent area to determine the decontamination necessary.

The two sides of the proposed placard for sealed radium sources. The size should be approximately 4 by 8 in. (10 × 20 cm.). It should be printed in magenta on a yellow background. The specifications of the sealed radium sources can then be put on the placard for immediate reference in case of a spill.

The specimens of urine, feces, and blood should be refrigerated and kept until arrangements can be made for analysis at a qualified laboratory. Proper collection and storage of these samples will be of great value to the exposed persons and also in obtaining data on radium metabolism.

The above studies will serve both as a base line for future determinations and as an indication of retention of radium within the body. Before the above studies and sample collections are carried out, all persons must be completely washed several times and must wear fresh clothing. Under no circumstances should they reenter the contaminated area.

Treatment for radium retained within the body should be carried out as follows.

1. Gastric lavage with 10% magnesium sulfate solution should be done as soon as possible. 2. There is probably little that can be done to speed the removal of radium salts that have been inhaled or absorbed from the gastroenteric tract. Since there is usually a certain amount of understandable concern on the part of the exposed persons, some type of medication should be given. Daily purging with saline cathartics will tend to promote excretion of radium from the gastroenteric tract, and this type of cathartic will act as a mild cholagogue. Since absorbed radium is excreted to a large degree through the bile, such therapy may be of some value. Administration of magnesium sulfate is suggested, since it will tend to precipitate soluble radium ions in the form of the insoluble sulfate. 3. If cuts and other skin lesions cannot be decontaminated, surgical excision of the area should be considered.

We make the following additional recommendations for handling of radium.

1. Persons who work with radium should have periodic physical examination and blood counts at least every six months, and more frequently if the exposure warrants. 2. When radium is supplied to an individual, institution, or industrial concern, an affidavit furnished by the radium manufacturer, describing the type of radium salt supplied, should be a part of the certificate furnished by the National Bureau of Standards. 3. The above recommendations should be incorporated into the "Handbook on Radium Protection" published by the National Bureau of Standards, and a copy of this handbook should be supplied with each shipment of radium in any form. 4. A placard describing the radium capsule and its contents should be placed in a prominent place wherever radium is kept. An appropriate design for such a placard with precautions to be followed in case of accident is shown in the accompanying figure.

Cincinnati General Hospital (29) (Dr. Saenger).

Hunger.—Hunger is a gastric sensation and is due to the strong peristaltic contractions that arise in the stomach when it is empty or nearly so. These may cause a sense of discomfort or actual pain—the pangs of hunger. The normal sensation of hunger is believed to be a purely local one, arising in the gastric region, and is not directly dependent upon the state of the blood or any state of the general tissues of the body. . . . The following facts indicate that hunger is not due to a general bodily state. It is aroused while the intestine still contains plenty of unabsorbed food, and becomes less intense in prolonged periods of starvation. Filling the stomach with bulky material that possesses little nutritive value, or is indeed totally inedible, inhibits the contractions characteristic of the empty organ, relieves the pangs of hunger and may even create a feeling of satisfaction. This fact has some practical bearing in the treatment of obesity, since the subject may satisfy himself with foods such as salads, fruits, etc., possessing large volume relative to their caloric value.—Charles Herbert Best, M.D., and Norman Burke Taylor, M.D., The Physiological Basis of Medical Practice, Baltimore, Williams & Wilkins Company, 1950, p. 604.

ENZYMATIC LYSIS OF RESPIRATORY SECRETIONS BY AEROSOL TRYPSIN

Carl R. Limber, M.D., Howard G. Reiser, M.D., L. Chandler Roettig, M.D.
and
George M. Curtis, M.D., Columbus, Ohio

Viscid respiratory secretions unquestionably exert considerable adverse influence on the normal mechanism of bronchial cleansing. Indeed the virulence potentiating ability of sticky sputum, and specifically mucin, has been demonstrated by many investigators.[1] For many years crude preparations of trypsin have been used for the lysis of sputum prior to examination for acid-fast organisms.[2] In view of the laboratory and clinical studies of Reiser and associates [3] on the use of trypsin as a lytic agent in tuberculous empyema and other lesions, the present study was undertaken to determine the suitability of crystalline trypsin (tryptar®) for lysis of tenacious sputum within the tracheobronchial tree.

PRELIMINARY LABORATORY STUDIES

In vitro 50,000 units of crystalline trypsin produces a dramatically rapid liquefaction in 25 cc. samples of thick sputum obtained from patients with active pulmonary tuberculosis. The lysis is reflected by the decline in the sputum viscosity measured by a method devised by Harris, Abrams, and Harris,[4] modified only to the extent of making practical the handling of infectious material. During the experimental period of tryptic action, a control specimen of sputum was not altered in viscosity. The results are summarized in table 1.

Microscopically, mucicarmine-stained sputum subjected to tryptic action is a homogenous sheet of small round and irregular masses. Bacteria, cells, and cellular fragments are still recognizable after three hours of tryptic activity.

Twenty-three rabbits were subjected to application of aerosol trypsin by a vaponefrin® nebulizer without a single fatality or any apparent discomfort. The results and doses are listed in table 2. Microscopic examination, following the use of aerosol trypsin, of the tracheobronchial tree as well as of the lung parenchyma revealed no deviation from the normal appearance. The tracheobronchial tree of 12 rabbits was removed, and the trachea was split longitudinally. Half of the trachea was subjected to trypsin in a concentration of 60,000 units per cubic centimeter, and the other half to saline solution. On the basis of the speed of transport of lamp black from the carina to the thyroid cartilage, no alteration in the ciliary action could be detected.

Since the preliminary studies seemed to indicate that aerosol trypsin is relatively harmless in doses far beyond the estimated therapeutic requirements, a series of clinical studies were undertaken in patients with active pulmonary tuberculosis who had tenacious sputum. The study was later extended to other conditions in which the high viscosity of sputum presented a problem.

USE OF AEROSOL TRYPSIN IN MAN

Methods of Administration.—Apparatus: The most satisfactory nebulizer in our hands has been the vaponefrin® type, developed by Alvin L. Barach, M.D., which is sold for the aerosolization of penicillin. This is supplied with exhalation valve, nasal mask, and rebreathing bag. Oxygen under pressure is supplied to the nebulizer by means of a medical oxygen tank via an automatic pressure reduction valve adjustable to flow rates of from 1 to 10 liters per minute. The trypsin is dissolved in Sorensen's phosphate buffer solution with a pH of 7.1, in proportions of 100,000 units of trypsin to each cubic centimeter of diluent.

Rate of Administration: The oxygen flow rate should be such as to aerosolize 1 cc. of trypsin mixture in five to six minutes. Usually 5 to 6 liters of oxygen will be required per minute; however, variations will be noted with different nebulizers. Too rapid delivery of aerosol will result in coughing and interfere with adequate treatment. Slower rates are quite effective but are time consuming. The total time of treatment can seldom exceed 15 minutes, as a productive cough usually begins at this time.

Initial Dosage Schedule: The usual first dose should be 50,000 units given slowly; after 24 hours a second dose of 100,000 units is given. After the third day doses of 200,000 units are usually well tolerated, tolerance being rapidly acquired. Doses up to 800,000 units have been used safely on occasion, but are not needed or recommended for ordinary use.

Interval of Treatments: Treatments should be given daily until effects have become apparent, i. e., until cleansing of the tracheobronchial tree is apparent, after which the interval may be longer if the effect is maintained. With atelectasis the treatment intervals were shortened to 12 hours between the first and second treatments.

Premedication and After Care: Administration of 50 mg. of diphenhydramine (benadryl®) hydrochloride and 10 grains (0.6 gm.) of acetylsalicylic acid 20 minutes before treatment will eliminate almost all reactions.

The nose should be sprayed immediately following treatment with a small amount of tap water to remove large droplets of trypsin caught in the nasal passages. If they are allowed to remain, mild burning will occur.

From the Department of Surgical Research, Ohio State University.

This investigation was aided in part by a grant from the Armour Laboratories, Chicago, and was conducted in the laboratories of the Clark County Tuberculosis Sanatorium, Springfield, Ohio (Wm. Habeeb, M.D., Director).

[1] Olitzki, L.: Mucin as a Resistance-Lowering Substance, Bact. Rev. **12**: 149, 1948. Anderson, C. G., and Oag, R. K.: Effect of Gastric Mucin on the Pathogenicity of the Meningococcus and Other Organisms: With Particular Reference to its Fractionation, Brit. J. Exper. Path. **20**: 25, 1939. Strauss, R. E., and Kligman, A. M.: The Use of Gastric Mucin to Lower Resistance of Laboratory Animals to Systemic Fungus Infections, J. Infect. Dis. **83**: 151, 1951.

[2] Illinois Public Health Laboratories, personal communication to the authors.

[3] Reiser, H. G.; Roettig, L. C., and Curtis, G. M.: Tryptic Debridement of Fibrinopurulent Empyema, in Surgical Forum: Forum on Fundamental Surgical Problems, 1950 Clinical Congress of American College of Surgeons, Philadelphia, W. B. Saunders Company, 1951, p. 17.

[4] Harris, T. N.; Abrams, W. B., and Harris, S.: Viscosimetric Measurement of Streptococcal Antihyaluronidase: Comparison with Titers Obtained by Turbidimetry, J. Infect. Dis. **86**: 122, 1950.

Alternate Method of Administration: An alternate method in which a glass oral delivery tube and intermittant aerosolization of trypsin are used has been effective. With this technique the nasal mask and the rebreathing bag are discarded. A "Y" tube is inserted in the rubber tubing that supplies oxygen to the nebulizer. An "S" tube is introduced between the nebulizer and the glass oral tube. The tubing from the nebulizer to the patient should have an inside diameter of ½ in. (1.3 cm.). During administration the patient regulates the oxygen flow to the nebulizer by placing a finger over the open end of the "Y" tube during inhalation and removing it during exhalation. Expired air passes out through the nose. The large droplets are removed by the "S" tube; if they remain, a large deposit of trypsin will build up on the vocal cords, with a resultant hoarseness. Results obtained with the nasal and oral methods are almost identical. The oral method is more economical, whereas the nasal method requires less patient cooperation.

Results.—In the preliminary studies patients with a variety of pulmonary pathological conditions were subjected to aerosol trypsin therapy; this data is presented in tabular form in table 3. Certain cases in which intensive treatment was given over a somewhat longer period are indicated by a dagger. These cases represent the type of problem in which theoretically some improvement from trypsin therapy would be expected, and these cases are reported in detail. To date a total of 33 patients have been treated, and a grand total of 251 individual aerosolizations have been given. In general the effects of intratrachial aerosolization of trypsin can be divided for discussion into four groups: immediate, gradual, and secondary effects and side-reactions.

Immediate Effects: 1. A tracheobronchial flushing is apparent soon after the start of treatment. It is demonstrated by an increase in the amount of sputum raised from the tracheobronchial tree. It is affected by ciliary action and cough. Its duration is from six to eight hours. It is probably produced by two factors: direct stimulation of the lining cells of the respiratory passages with resultant secretion of fluid, and digestion of mucus already present, with the resultant reduction in viscosity and improvement in ciliary effect. 2. A cough effect accompanies the flushing. It may be marked in patients with copious sputum production. The cough is loose and productive and hence is not particularly tiring. This cough continues from one to three hours following treatment. 3. Thinning of the sputum is especially apparent in persons who have had thick viscid sputum. Not all the sputum is thinned, since many lumps are loosened and immediately coughed up before tryptic digestion occurs. 4. Coughing is decreased several hours (two to three) after treatment, and this result probably represents the effect of an empty tracheobronchial tree. This effect is most apparent in patients who had an excessive cough prior to treatment.

TABLE 1.—*Viscosity-Lowering Effect of Trypsin * on Sputum as Measured by "Pipette Method"*

Sputum Sample	Minutes of Digestion 3	4	5	6	7	8	9	10	11	12
	Volume Flow, Cc.									
1...........	1.5	2.25	2.6	3.55	4.5	5.5	7.0	8.5	9.25	9.7
2...........	1.8	2.6	3.3	4.0	5.3	6.6	7.8	9.1	9.8	9.9
3...........	1.6	2.4	3.0	3.75	4.9	6.15	7.4	8.9	9 65	9.8
4...........	1.7	2.5	2.9	3.7	4.8	6.0	7.4	8.85	9.5	9.8
5...........	1.85	2.7	3.4	4.1	5.4	6.8	8.0	9.2	9.85	9.9
6...........	1.75	2.5	3.1	3.85	5.0	6.25	7.5	9.0	9.75	9.9
7...........	1.8	2.5	3.2	3.95	5.25	6.4	7.7	9.0	9.75	9.9
8...........	1 65	2.35	2.8	3.6	4.70	5.6	7.1	8.6	9.45	9.75
9...........	1 9	2.8	3.6	4.2	5.6	7.0	8.2	9.3	9.8	9.95
10...........	1.7	2.4	3.0	3.8	4.95	6.25	7.5	8.9	9 7	9.85
Average.....	1.72	2.50	3.09	3.85	5.01	6.25	7.56	8 93	9.65	9.81

* Each sample of 25 cc. of sputum was subjected to 50,000 units of trypsin.

TABLE 2.—*Analysis of Results of 249 Aerosol Trypsin Administrations in Twenty-Three Rabbits **

No. Treated	Days Treated	Units of Trypsin Daily	Day Sacrificed	Microscopic Changes Noted	Total Units Trypsin Given
2	14	100,000	15th	Trachial mucosa intact; no bronchial or lung changes noted	1,400,000
2	14	100,000	21st	Same	1,400,000
1	21	100,000	22nd	No changes noted	2,100,000
4	7	200,000	....	Remained healthy	1,400,000
2	1	400,000	14th	No changes noted	400,000
1	14	400,000	14th	Tracheal mucosa normal; slight alveolar wall thickening	5,600,000
9	14	400,000	....	Remained healthy	5,600,000
1	1	750,000	12 hrs.	Slight edema of lungs; no other changes seen	750,000
1	1	800,000	....	Remained healthy	800,000

* The rabbits, weighing from 4.5 to 5 lb. (2,041 to 2,268 gm.), all survived the treatment.

Gradual Effects: The gradual effects are somewhat variable, depending on the specific disease present and the character of the sputum, as well as other factors. In general the following are noted in most cases.

1. Sputum changes occur, and consist of decreased daily measured sputum output when it has been excessive, as in tuberculosis and bronchiectasis. This decrease may be marked and dramatic. Putrid sputum shows a gradual decrease in the pus cells and cellular elements, becoming thinner and clearer in appearance. Tuberculous patients with positive sputum have uniformly shown a marked decrease in the number of tubercle bacilli in the sputum. The sputum may become negative for tubercle bacilli if treatments are continued long enough. Reversal has occurred in patients with open cavities and in those with roentgenographic evidence of active disease. The significance of this reversal has not been definitely determined, but it probably represents a cleansing action. Once obtained, it persists for three to six weeks after trypsin treatments are discontinued. After this the sputum may again become positive. No conclusive evidence of any direct interference with the growth of the tubercle bacillus has yet been demonstrated. 2. Granulation tissue growth is accelerated when tracheal or bronchial ulcerations are present. This has been observed bronchoscopically, and conforms to the effect of trypsin on surface wounds. 3. Vital capacity increases have been small but uniform. In some cases this increase has been marked, and has contributed greatly to the patient's comfort and recovery. The greatest increases have been noted in atelectasis and bronchiectasis.

Secondary Effects: Following prolonged administration of aerosol trypsin, there is an increase in weight, improved sleep, increased appetite, and a general improvement in feeling of well being. Sleep is especially improved in patients who had severe productive coughs prior to treatment. The need to cough is less as the respiratory tract is clearer. Appetite improves as the sputum volume falls and the sputum becomes less purulent. The increased appetite is probably a reflection of improved taste and a decrease in amount of sputum swallowed. A weight gain

TABLE 3.—*Analysis of Cases of Twenty Patients Treated with Aerosol Trypsin*

Case No.	Age, Yr.	Diagnosis and Status	No. of Treatments	Total Units Given	Days Treated	Results
Tuberculosis *						
1	24	Tb with left pneumonectomy, later spread to right lung; massive cavity, left bronchopleural fistula; sputum heavily positive; a terminal case, pilot study only	4	400,000	8	Reduced sputum volume; thinned sputum; reduced bacterial count in sputum; less night cough
2	45	Generalized Tb all lobes with multiple cavitation; a terminal case, pilot study only	5	900,000	35	Reduced sputum and cough; improved sleep; thinned sputum; ate better
3	21	Far advanced Tb with multiple large cavitations, severe dry cough, viscid sputum positive for acid-fast bacilli	4	500,000	7	Sputum thinner; less cough; reduced bacterial count in sputum
4 †	51	Bilateral far advanced Tb upper lobes with emphysema lower lobes, recent atelectasis in left upper lobe owing to blocked bronchus; sputum continuously positive 5 years	8	850,000	26	Sputum reversed; less cough; decreased sputum; marked weight gain; generally improved
5 †	31	Moderate advanced bilateral Tb upper lobes with cavitation and bronchial obstruction on the left; sputum positive; severe cough, fever, rhonchi	21	3,350,000	89	Sputum reversed; marked weight gain; decreased cough; decreased volume of sputum; no rhonchi
6	45	Far advanced bilateral Tb with 8 rib thoracoplasty on left and cavitation in remaining lung; severe cough, large volume sputum, poor sleep, trachial stenosis with deviation, positive sputum	2	400,000	2	Unimproved, treatments stopped because of hoarseness (early case, did not know how to prevent it at that time)
7 †	59	Far advanced bilateral Tb; large cavity occupying entire right upper lobe; positive sputum	17	1,625,000	74	Weight increased; better sleep; increased appetite; decreased sputum; bacterial count reduced
Tuberculosis with Bronchiectasis ‡						
20 †	31	Far advanced Tb with destruction of left lung and fibrosis; marked bronchiectatic cavities with large amount of putrid sputum, which was positive	22	3,950,000	48	Sputum reversed—greatly decreased in volume and improved in character; weight gain; increased vital capacity; left pneumonectomy successful
Bronchiectasis with Complications						
30	59	Bronchiectasis with postoperative atelectasis and bronchial asthma; required oxygen nasally for comfort; temperature 101 F, harassing cough	2	400,000	8	X-ray evidence of clearing; normal temperature; general improvement; reduced cough
31 †	47	Bronchiectasis with asthma and rheumatic heart disease; grossly infected sputum; vital capacity 500 cc.; bedridden, dyspneic, digitalized	13	1,175,000	75	Prompt improvement in cough; decreased dyspnea; vital capacity 1,400 cc. on 5th day; out of bed 5th day; does own work now
32	60	Bronchiectasis with decompensated heart disease; terminal	2	400,000	4	Unimproved; no further therapy given because of no response to initial treatments
Postoperative Atelectasis						
40	24	Postoperative atelectasis following thoracotomy for repair of stab wound of left chest; cut left phrenic with diaphragmatic paralysis	4	800,000	4	Prompt decrease in sputum viscosity; reexpansion prompt but complicated by empyema, which was treated with intrapleural trypsin successfully
41 †	89	Postoperative atelectasis following bowel resection for carcinoma	2	400,000	2	Prompt reexpansion in 18 hr.
42	24	Postoperative atelectasis following thoracotomy	2	400,000	2	Prompt reexpansion in 24 hr.
43	67	Postoperative atelectasis following dehiscence with paralytic ileus and marked abdominal distention	2	800,000	2	Prompt thinning and some increase in sputum; reexpansion in 48 hr. despite marked abdominal distention
Unresolved Pneumonia						
50	58	Pneumococcic pneumonia, unresolved 2 weeks after subsidence of acute symptoms	2	400,000	4	Resolution became evident following second treatment; good recovery in 8 days
Nonspecific Pneumonitis and Bronchitis						
60	55	Nonspecific chronic pneumonitis, diagnosed by pulmonary biopsy, with purulent sputum production and inspissated mucous plugs	8	1,400,000	21	Greatly decreased sputum; less fever; thinner, more easily raised sputum; less toxicity clinically
Diagnostic Trials						
70	69	Suspected Tb with repeatedly negative sputum; Trypsin given to debride tracheobronchial tree of detritus and sputum, and to provide specimen for concentration and acid-fast smear and culture	1	200,000	1	Acid-fast bacilli found on smear and culture
71	34	Same as above	2	400,000	2	No acid-fast bacilli found by this or any other means
72	20	Same as above	2	400,000	2	Same as above

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* Eight additional patients with tuberculosis have been treated in a separate study by one of us (H. R.). The results in these cases are not included but correspond to those reported here. Tb = tuberculosis.

† These patients were treated intensively over a somewhat longer period, in which theoretically improvement following trypsin therapy could be expected.

‡ Five additional patients with mild bronchiectasis have been treated as outpatients. They will be reported on in a separate study, as therapy is still in progress.

was observed even in patients who had had stable weight for months.

Side-Reactions: The side-reactions seen were of a mild nature, occurring in approximately 5% of the patients treated. They tended to decrease and disappear as therapy progressed. Two types of reaction occurred: dyspnea and chill and fever. Patients with the latter reaction had a mild chill followed by a temperature elevation as high as 101 F. This occurred 6 to 12 hours after treatment. Administration of 10 grains (0.6 gm.) of acetylsalicylic acid will give relief and may prevent these chills and fever if done four to five hours after treatments. At no time was this latter reaction severe enough to interfere with therapy.

Dyspnea occurred in some patients with low vital capacities and was seen at the end of, or shortly after, completion of treatment. Its incidence has been about 2% and it has been severe in only two instances. It is promptly relieved by intravenous injection of 25 mg. of diphenhydramine hydrochloride. It has been noted that patients tend to rapidly acquire a tolerance to trypsin, and usually stop having reactions after three or four treatments.

Hoarseness [5] and nasal and eyelid irritation may occur with breaks in technique. They indicate failure to rinse out the nasal passages or to wash the face after therapy. Hoarseness occurs from improper aerosolization, i. e., too rapid administration, lack of "S" tube, or use of too concentrated mixtures.

REPORT OF CASES

Case 4.—M. F., a white woman aged 48, with far advanced bilateral tuberculosis of the upper lobes complicated by emphysema of the lower lobes, was admitted to the sanatorium in January, 1948. The onset of her illness was in March, 1947. On admission to the sanatorium she had cough, expectoration, elevated temperature, a 16 lb. (7.3 kg.) weight loss (present weight 86 lb. [39.0 kg.], night sweats, and fatigue. Her sputum was positive. Treatment from the time of admission to April 1, 1951, included bed rest, streptomycin, pneumoperitoneum, and high caloric diet. A left phrenic nerve crush was performed Feb. 9, 1950. During the entire period the sputum remained grossly positive for tubercle bacilli, and her disease did not regress.

On April 1, 1951, a severe cough developed, with wheezing, high-pitched musical rales, a temperature elevation of 101 to 102 F, generalized malaise, and thick, highly viscid sputum. Roentgenograms at this time as compared with those taken one month before revealed a new area of atelectasis in the upper lobe of the right lung. The sputum contained many acid-fast organisms, and the vital capacity, which had been 2,400 cc. one month previously, was 1,900 cc.

Aerosol trypsin therapy was started April 6, 1951. She received eight treatments over a period of one month. The doses consisted of 200,000 units on April 6, 1951, 150,000 units on April 9, 100,000 units on April 13, 16, 21 and 24, and 50,000 units on April 28 and May 2. Following the first treatment the temperature returned to normal, a small amount of sputum appeared, cough became less troublesome, wheezing disappeared, she was able to sleep, and her appetite returned. Her weight, which on admission in 1948 was 86 lb., had increased to 122 lb. (39.0 to 55.3 kg.)—an increase of 9 lb. (4.1 kg.) within the month of trypsin therapy. The previous six months her weight had remained stationary. The marked increase in appetite was apparent both to the patient and to the nurses. Sleep was less disturbed by coughing, which, though not entirely eliminated, was nonirritating and productive. Roentgenograms indicated improvement. The daily sputum volume, which had been 10 cc. on the first day of therapy, rose gradually to 50 cc. on April 28 and then decreased to 20 cc. on May 2. The number of acid-fast organisms had fallen from approximately 100 per oil immersion field on April 6 to approximately 75 on April 9 and to 50 on April 13. A diminution in the number continued, and on April 28 the sputum became negative and remained so on daily examination until May 25, i. e., for 22 days following discontinuation of therapy. At this time, May 25, occasional organisms were seen, and by July 23 the sputum had gradually returned to its former bacteriological content. The vital capacity during the month of therapy had increased from 1,900 cc. to 2,500 cc. Six hours after trypsin treatments on April 24 and 28, slight chills and a temperature of 100 F were noted; however, they were easily controlled with acetylsalicylic acid. No other untoward reactions were observed.

Case 5.—M. S., a white housewife aged 31, was admitted to Clark County Tuberculosis Sanatorium on Nov. 20, 1950, with a history of a miscarriage in January, 1950, followed by a bilateral salpingectomy in July, 1950. Following this she did not feel well. Two and a half months later, on Sept. 15, 1950, hoarseness developed, followed in two weeks by a productive cough. Her weight decreased from 115 to 110 lb. (52.1 to 49.9 kg.). Roentgenograms taken on Oct. 23 showed bilateral moderately advanced tuberculosis in the upper lobes of both lungs. Complete blood count was normal, the sedimentation rate was 25 mm. in 30 minutes (Wintrobe), and the sputum was positive for acid-fast organisms.

A 60 day course of streptomycin was started on Oct. 23, 1950, and pneumoperitoneum was instituted on Dec. 15, 1950. Little clinical change was noted until March 5, 1951, when a severe dry cough and loud rhonchi originating over upper lobe of the left lung developed that could be heard over the entire room. Sputum production had fallen from 75 cc. to 20 cc. in 24 hours. The vital capacity was 2,300 cc. Her temperature was elevated to 101.2 F in the afternoons. Roentgenograms showed an area of atelectasis in the upper lobe of the left lung, which had not been present on previous examinations. The weight was 125 lb. (57 kg.), the appetite poor, and sleep disturbed by cough.

On March 8, 25,000 units of trypsin was given via aerosolization, and on the following day 200,000 units was administered. Sputum production increased to 60 cc. The cough became more productive and was confined to the immediate post-treatment period rather than to the entire 24 hour period. The temperature returned to normal, and the general condition as to sleep and appetite improved. A bronchoscopic examination on March 26 revealed slight bleeding from the upper left bronchus. On March 12, 15, and 16, 200,000 units of trypsin was given, and on March 27, 29, April 5, and 9, the dose was increased to 250,000 units. On April 13, 16, 20, and 23, 100,000 units was administered, and on April 25, 50,000 units. During this period the vital capacity increased from 2,300 to 2,600 cc., and the cough decreased, with production of 10 to 15 cc. of sputum in 24 hours. The sputum remained negative after March 27. In addition the weight increased 7 lb. (3.2 kg.), the appetite was good, and sleep uninterrupted.

Since a small cavity, evident in the upper lobe of the left lung, was not affected by pneumoperitoneum, a left phrenic nerve crush was done on May 1. On May 15, sputum production rose markedly to 75 cc. in 24 hours, although she had received 100,000 units of trypsin on May 12 and 15. The dose was therefore increased to 250,000 units on May 18, with prompt subsidence of the dyspnea, wheezing, and cough that had developed subsequent to the left phrenic nerve crush on May 1. An additional 200,000 units of trypsin was given on May 26, followed by 100,000 unit doses on May 29 and June 5. The patient maintained her improvement following these doses without further trypsin therapy. The sputum remained negative. However, as the cavity in the left apex was not affected by the pneumoperitoneum and left phrenic nerve crush, she was subjected to a left thoracoplasty on Aug. 25, 1951. Her subsequent course was satisfactory; the sputum has remained negative and there has been no evidence of spread. The lesion in the upper lobe of the right lung is apparently inactive and healing.

Case 7.—M. M., a white housewife aged 59, was admitted to the Clark County Sanatorium July 28, 1950, with a 16 year history of tuberculosis. She had had a rest cure early in her disease and had remained apparently well until 1949, when a panhysterectomy was done. Following this, dyspnea, cough, expectoration, anorexia, and a weight loss of 12 lb. (5.4 kg.) developed. Roentgenograms taken on July 21, 1950, revealed a large cavity that almost replaced the entire upper lobe of the right lung, plus a few scattered soft areas in the upper lobe of the left lung.

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[5] With highly purified trypsin available at present, hoarseness and mucosal irritation have not been observed following the last 50 treatments.

On admission, her weight was 102 lb. (46.3 kg.), complete blood count and urinalysis revealed no abnormalities, and the sedimentation rate was 31 mm. at the end of one hour (Wintrobe). On Aug. 12, 1950, pneumoperitoneum was instituted; however, after a five months' trial it was discontinued, since it had been ineffectual in closing the large cavity in the upper lobe of the right lung. On March 20, 1951, she had a frequent harassing dry cough, which in 24 hours produced approximately 20 cc. of sputum loaded with acid-fast bacteria. At this time, the vital capacity was 2,100 cc., weight 115 lb. (52.1 kg.), appetite and sleep poor, and her temperature 99 F. The following day, March 21, 200,000 units of trypsin was administered via intranasal aerosolization; the sputum production increased from 20 to 80 cc. per 24 hours. On March 26, 250,000 units of trypsin was given, and 100,000 units was administered on April 5, 9, 15, 19, and 22. By April 9 the cough had subsided markedly, and the daily sputum had decreased from 80 cc. to 30 cc. and was much less purulent in appearance. The appetite was greatly improved, and sleep was sound. Slight reactions consisting of chills followed by temperature elevations to 101 F followed administration of trypsin on April 15, 19, and 22. Administration of 50 mg. of diphenhydramine hydrochloride orally prior to therapy failed to prevent this reaction. The subsequent dose given on April 23 and 25 was reduced to 50,000 units of trypsin, followed by administration of 10 grains (0.6 gm.) of acetylsalicylic acid at the time of treatment and six hours after treatment. No further reactions occurred. On May 2, 6, 8, 12, 15, 18, 26, 29, and June 2, 200,000 units of trypsin was given, and at each treatment acetylsalicylic acid was given as before. Her vital capacity had increased from 2,100 cc. on March 20 to 2,500 cc.; and her weight increased from 115 lb. to 130 lb. (52.1 to 59.0 kg.) in the same period. Her appetite was excellent, sleep was undisturbed, and the amount of sedation required to control the cough was markedly reduced. Sputum production averaged 30 cc. in 24 hours, and the sputum was much less purulent in character. Sputum smears revealed an occasional tubercle bacillus, whereas at the onset of therapy smears had contained many organisms. Trypsin therapy was discontinued June 2, 1951, owing to personnel changes. By Aug. 29, 1951, an increase in the number of acid-fast organisms could be observed in sputum smears, and by Sept. 19, three and a half months following discontinuance of trypsin therapy, the sputum had returned to its former gross and microscopic appearance. Four months later trypsin therapy was again carried out as preparation for lobectomy; results were similar to those of her first course of therapy, and a successful lobectomy was performed on the right side, removing most of her disease.

Case 20.—B. B., a white married woman aged 31, was admitted to the Clark County Tuberculosis Sanatorium Aug. 10, 1945, with a history of pleurisy in February, 1945. A tooth extraction in March, 1945, was followed by temperature elevation, malaise, and forced bed rest for three months. Roentgenograms taken in June revealed tuberculosis of upper lobe of the left lung, and she was admitted to Clark County Tuberculosis Sanatorium for treatment.

During her five year stay in the sanatorium bronchiectasis developed in the lower lobe of the left lung, and the remainder of the lung had become completely involved in the tuberculous process and had fibrosed to such an extent that there was marked mediastinal shift to the left. An early left phrenic nerve resection had been done. She had been receiving pneumoperitoneum for many months. Three separate attempts had been made to prepare her for pneumonectomy, and on each occasion discontinuing the pneumoperitoneum resulted in spread of the disease to the right lung, forcing abandonment of the planned pneumonectomy. On April 5, 1951, just prior to institution of trypsin therapy, the vital capacity was 1,500 cc. The daily sputum production, which was 225 cc., consisted of very thick, viscid material loaded with tubercle bacilli. The appetite was poor, the weight was 114 lb. (52 kg.), and the temperature for the past month had ranged from 101 to 101.5 F. Sleep was interrupted by frequent bouts of coughing, requiring administration of large doses of methadone (dolophine®) hydrochloride and codeine.

On April 5, 1951, treatment with 100,000 units of aerosol trypsin was given, followed by treatment with 200,000 units on April 6, and 150,000 on April 9. At the end of this five day period the vital capacity had increased from 1,500 cc. to 1,850 cc., the daily sputum production had dropped from 225 cc. to 75 cc., and the sputum contained a slightly decreased number of acid-fast bacilli. In addition, the temperature returned to normal, the appetite improved, and she was able to sleep. Additional amounts of trypsin were administered, i. e., 100,000 units on April 13, 16, 21, and 24, and 50,000 units on April 28 and May 2. The patient continued to improve, and it became evident that she would be a candidate for pneumonectomy. Pneumoperitoneum was discontinued on May 12, and a bronchoscopic examination made on May 17 revealed the left lower bronchi to be clear of pus and sputum and lined with clean granulation tissue. The right bronchi were clean and free of ulcerations. Previous bronchoscopic examinations demonstrated large amounts of purulent sputum in the left lower bronchi and trachea. By May 23 the daily sputum production had decreased from 225 cc. to 15 cc., and the sputum was negative for acid-fast bacilli for the first time. The vital capacity had risen to 2,000 cc., the temperature was normal, and the weight had increased 14 lb. (6.4 kg.). Left pneumonectomy was done on May 24. The subsequent postoperative course was uneventful, and there was no roentgenographic evidence of spread to the right lung. The patient was discharged from the sanatorium on Sept. 21, 1951, and in a five months follow-up from the date of discharge roentgenograms revealed no abnormalities, and the sputum was negative. She had no clinical symptoms. She has returned to her usual activities as a housewife.

Case 31.—S. M., a white woman aged 47, was admitted to the hospital because of bronchiectasis complicated by severe asthma (bronchial), and rheumatic heart disease. On admission she was toxic and completely invalided. She complained of marked weakness and exertional dyspnea, even when in bed. The vital capacity on admission was 500 cc. She had no appetite and had to be urged to eat. The sputum was purulent. The temperature was elevated daily to 101 F. Therapy with penicillin and streptomycin had failed to produce more than slight improvement. She had been digitalized. Roentgenograms revealed emphysema in the upper half of each lung field and increased density and increased bronchial markings in the lower halves of the lower lobes. Previous bronchograms had demonstrated the presence of a moderate bilateral bronchiectasis.

With some hesitation she was given a trial administration of 50,000 units of aerosol trypsin. Because of her low vital capacity this was preceded by administration of 25 mg. of diphenhydramine hydrochloride intravenously. She had considerable dyspnea from about 10 minutes after termination of therapy. Nasal administration of oxygen provided relief, and the dyspnea subsided in about one hour. During this time she began to cough up a considerable amount of thin purulent sputum, which contained numerous small lumps of inspissated mucous.

Treatment was not repeated the following day because of the dyspnea that had occurred. She stated that she "felt much better and could breathe better." On the third day at her own request a second treatment was given, using 50,000 units of trypsin. Again she was dyspneic. Administration of oxygen and diphenhydramine produced improvement more promptly than before. In the next 48 hours she improved rather remarkably in that she felt much better, was less dyspneic, had improved appetite, and was able to be out of bed. A decrease in sputum production was noted. Vital capacity measurements increased from 500 to 1,400 cc.

She was discharged from the hospital and returned to the outpatient department, where she was treated with 100,000 units of aerosol trypsin weekly for 10 weeks. Since then she has maintained her improvement. She is able to be up and about, does a little housework, and is no longer a bedridden invalid.

Roentgenograms show a clearing in the lower lobe areas. Her sputum production is quite decreased over the former amounts. It is thinned for a period of 36 to 48 hours after each treatment, then is almost absent for 48 hours, after which there is a gradual increase in amount and viscosity. (Biweekly treatments would have been preferred but could not be arranged owing to transportation difficulties.)

Case 41.—R. N., a white woman aged 89, was admitted to the hospital complaining of rectal bleeding of six weeks' duration. Roentgenograms of the colon revealed a malignant growth in the transverse portion. Her cardiac decompensation was treated with digitalis, and her anemia corrected with repeated small transfusions, after which a simple resection of the adenocarcinoma in the colon was done. She promptly developed a postoperative area of atelectasis in the lower lobe of the right lung, with a similar smaller area in the lower lobe of the left lung.

Trypsin therapy in doses of 100,000 units was given by aerosol method, at 12 hour intervals for 48 hours. The initial treatment was immediately followed by a productive cough. Gradual clearing of the atelectatic areas occurred over a period of 48 hours, at which time no further therapy was needed. She continued to improve until her discharge from the hospital.

SUMMARY AND CONCLUSIONS

Preliminary laboratory studies indicate that trypsin implements sputum lysis in vitro, and that, in vivo, aerosol trypsin is relatively nontoxic, harmless to respiratory tissue, and does not impede ciliary action. In clinical conditions in which heavy, thick, tenacious respiratory secretion is a significant factor, treatment with aerosol trypsin results in the following changes: 1. Ciliary action is promoted by thinning of the sputum; 2. A watery bronchial secretion occurs, the mechanism of which is not clearly understood, but is probably a response to minor cellular irritation; 3. The sputum is thinned by implementation of mucolysis; 4. Mucous plugs are loosened since the surface of these plugs is subjected to enzymatic digestion; 5. Cough effectiveness is increased by the summation of lytic and secretory effects. 6. Finally in a limited number of cases, the bronchial cleansing thus accomplished has been sufficient to render the sputum of tuberculous patients negative to the usual laboratory methods of detection.

Using the methods described, aerosol trypsin is apparently a safe effective means of promoting bronchial cleansing. With adequate bronchial cleansing it follows that a more normal bronchial physiology is attained; the patient rids himself of accumulating infectious and toxic respiratory debris and lysed mucus, forces that favor continued bacterial action.

LOCAL SHIFTING OF BLOOD IN THE LOWER EXTREMITIES

Howard L. Reese, M.D., Milton L. Cullen, M.D.
and
Francis D. Beyer, M.D., Philadelphia

Medical and surgical therapy for peripheral vascular disease is designed for the most part to increase the blood supply to the affected part. It is inevitable that an increased blood flow to a portion of an extremity is supported by either an increase in cardiac output or vasoconstriction in other areas. It must always be borne in mind, therefore, that the therapeutic agents and procedures that increase blood flow to one tissue component of an extremity may cause a simultaneous decrease in blood flow in another part of the extremity. The classical clinical example of this is in the treatment of intermittent claudication. It cannot be assumed that therapeutic agents and procedures that increase skin blood flow will benefit patients with intermittent claudication. Friedlander, Silbert, and Bierman [1] called attention to this fact by demonstrating that in most instances changes in calf muscle temperature did not parallel changes in skin temperature. The development of Kety's [2] radiosodium clearance method of estimating calf muscle circulation afforded us an opportunity of obtaining additional data on calf muscle circulation under conditions of increased blood flow to other portions of the lower leg. Blood flow was increased in other muscles of the extremity by exercise (forceful plantar flexion). Blood flow in the skin was increased by administration of priscoline® (2-benzyl-2-imidazoline hydrochloride) and direct heat. Studies were also made before and after heating the body, but increased skin blood flow did not develop in the lower extremity of these subjects.

METHODS, MATERIALS, AND SUBJECTS

The radiosodium clearance method of estimating calf muscle circulation has been fully described elsewhere and an evaluation of the usefulness and limitation of the method has recently been reported from this laboratory.[3] Briefly, it consists of measuring with a Geiger counter the rate of disappearance of radioactive sodium injected into the calf muscle. The results are expressed in terms of a constant, "k," an average normal value of which is 0.040. A high "k" indicates rapid clearance and a low "k" indicates slow clearance. Although there is considerable variation in individual determination, it was found that in a group of normal subjects (table 1), the average "k" in right legs was equal to the average "k" in left legs. This enabled us as a rule to make controlled observations on one extremity and experimental observations on the other.

The experiments with controls, exercise, direct heat, and priscoline® were done at room temperature, after at least a four-hour fast and one hour of complete rest. The

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From the Harrison Department of Surgical Research, School of Medicine, University of Pennsylvania.

This study was done under contract between the Department of the Army and the University of Pennsylvania.

[1] Friedlander, M.; Silbert, S., and Bierman, W.: Regulation of Circulation in Skin and Muscles of Lower Extremities, Am. J. M. Sc. 199: 657, 1940.

[2] Kety, S. S.: Measurement of Regional Circulation by Local Clearance of Radioactive Sodium, Am. Heart J. 38: 321, 1949.

[3] Reese, H. L.; Darrow, R. P., and Cullen, M. L.: Calf Muscle Blood Flow, Before and After Operation and During Various Normal and Pathological States, Surg., Gynec. & Obst. 92: 751, 1951.

experiments with heating the body were done under the same basal conditions, but in a constant temperature room maintained at 20 C (68 F) and 60% relative humidity. Skin temperatures were recorded by means of copper-constantan thermocouples.

TABLE 1.—*Value of "k" in Normal Subjects at Rest, and with Exercise, Heat, or Priscoline® **

Normals		Exercise: Plantar Flexion		Exercise: Dorsiflexion		Direct Heat		Priscoline®	
Left	Right	Control Left	Right	Control Left	Right	Control Left	Right	Control Left	Right
0.028	0.040	0.018	0.024	0.035	0.036	0.032	0.029	0.048	0.037
0.064	0.064	0.027	0.063	0.059	0.046	0.068	0.049	0.061	0.031
0.045	0.044	0.034	0.039	0.076	0.050	0.025	0.015	0.030	0.024
0.031	0.031	0.026	0.034	0.033	0.021	0.046	0.054	0.036	0.028
0.034	0.044	0.045	0.065	0.060	0.048	0.034	0.029	0.052	0.042
0.036	0.045	0.028	0.061	0.029	0.031	0.036	0.040	0.046	0.027
0.075	0.050	0.056	0.044	0.053	0.037	0.096	0.075	0.049	0.038
0.056	0.053	0.042	0.076	.....	.....	0.061	0.041	0.031	0.031
0.048	0.038	0.025	0.040	.....	.....	0.045	0.034	.....	.....
0.043	0.042	.....	.....	.....	.....	0.029	0.042	.....	.....
0.023	0.019	.....	.....	.....	.....	0.055	0.053	.....	.....
0.028	0.031	.....	.....	.....	.....	0.032	0.030	.....	.....
0.051	0.047	.....	.....	.....	.....	0.045	0.030	.....	.....
0.029	0.033	.....	.....	.....	.....	0.034	0.024	.....	.....
Mean 0.042	0.042	0.033	0.048	0.049	0.038	0.046	0.039	0.045	0.032

* In normal subjects the mean "k" of the left leg (0.042) is equal to the mean "k" of the right leg (0.042). Plantar flexion increases (0.033 to 0.048) and dorsiflexion decreases (0.049 to 0.038) effective calf muscle circulation. Direct heat (0.046 to 0.039) and priscoline® (0.045 to 0.032) reduce effective calf muscle circulation.

The material used was isotonic isosmotic radioactive sodium chloride prepared, as reported previously,[3] from radioactive sodium carbonate obtained from the laboratories of the United States Atomic Energy Commission. The subjects were healthy adult volunteers, between the ages of 21 and 35.

RESULTS

Normal Subjects at Rest.—As seen in table 1, in 14 subjects the average "k" of the right legs was 0.042 and the average "k" of the left legs was 0.042.

Exercise.—The results are divided into two groups. In the first group calf muscle blood flow was increased by forceful plantar flexion against a springboard. "k" was then measured immediately after exercise. As expected the average calf muscle "k" increased from the control of 0.033 to 0.048. In the second group blood flow was increased in the anterior group of leg muscles by forceful dorsiflexion. After exercise, "k" was then measured in the antagonistic calf muscles. As seen in table 1, the average muscle "k" decreased from the control of 0.049 to 0.038. The results in each group were found to be statistically significant.

Priscoline.®—This drug has been shown to increase peripheral cutaneous blood flow by several investigators.[4] In our experiments in eight subjects, skin blood flow was increased by the intravenous injection of 35 mg. of priscoline.® No untoward symptoms were observed. Siedek[5] has shown that vascular responses to this agent occur within 20 minutes after injection. Twenty minutes after injection "k" was determined in the right leg. As seen in table 1, after administration of priscoline® seven of eight subjects had lower "k's," a statistically significant decrease. The average "k" following the use of priscoline® was 0.032, compared with the average control "k" of 0.045.

Direct Heat.—In 14 subjects skin blood flow was increased by application of heating pads around the foot and calf. After 15 minutes, when sweating had occurred, the "k" was obtained with the heating pads in place. As seen in table 1, the average "k" decreased from the control of 0.046 to 0.039. This decrease was found to be statistically significant.

Indirect Heat.—In this group of 18 patients, in addition to the control "k," skin temperatures were recorded in the hands and feet. Heating pads and two blankets were placed over the trunk, and, after maximal increase in skin temperatures was obtained, "k" was determined in the right leg. As seen in table 2, the average increase in skin temperature of the fingers was 10.1 (F). Only four of 13 subjects showed increased toe temperatures, and the average temperature after heat was equal to the average control toe temperature. Likewise there was no

TABLE 2.—*Effect of Body Heating* on Calf Muscle "k," and on Finger and Toe Temperatures*

"k"			Skin Temperature Changes, Degrees (F)	
	Control Left	Right	Finger	Toe
	0.064	0.016	......	.....
	0.039	0.063	......	.....
	0.038	0.018	+10.4	−1.3
	0.017	0.036	+ 3.9	+1.7
	0.027	0.049	......	.....
	0.030	0.044	......	.....
	0.043	0.024	+ 2.8	+0.3
	0.034	0.017	+ 4.2	−0.6
	0.037	0.021	+16.8	−0.5
	0.011	0.024	+14.4	+7.4
	0.017	0.027	+16.8	−1.8
	0.036	0.021	+10.6	−1.9
	0.042	0.030	......	.....
	0.019	0.028	− 0.9	−0.9
	0.029	0.034	+14.3	+2.4
	0.031	0.020	+ 3.0	0
	0.020	0.022	+14.6	−0.9
	0.022	0.021	+21.1	−1.7
Mean	0.030	0.029	+10.1	0

* Heating the body increases finger temperatures but on the average in this group had no effect on toe temperatures or calf muscle circulation.

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4. (*a*) Ahlquist, R. P.; Huggins, R. A., and Woodbury, R. A.: The Pharmacology of Benzylimidazoline (Priscol), J. Pharmacol. & Exper. Therap. **89**:271, 1947. (*b*) Grimson, K. S.; Reardon, M. J.; Marzoni, F. A., and Hendrix, J. P.: The Effects of Priscol (2-Benzyl-4,5-Imidazoline HCl) on Peripheral Vascular Diseases, Hypertension, and Circulation in Patients, Ann. Surg. **127**:968, 1948. (*c*) Murphy, R. A., Jr.; McClure, J. N., Jr.; Cooper, F. W., Jr., and Crowley, L. G.: The Effect of Priscoline, Papaverine, and Nicotinic Acid on Blood Flow in the Lower Extremity of Man: Comparative Study, Surgery **27**:655, 1950. (*d*) Horwitz, O.; Montgomery, H.; Longaker, E. D., and Sayen, A.: Effects of Vasodilator Drugs and Other Procedures on Digital Cutaneous Blood Flow, Cardiac Output, Blood Pressure, Pulse Rate, Body Temperature and Metabolic Rate, Am. J. M. Sc. **218**:669, 1949.

5. Siedek, H.: Die vegetative Struktur des Individuums im Lichte der Kreislaufwirkung des Priscols (Benzylimidazolin), Ztschr. f. klin. Med. **139**:239, 1941; quoted by Horwitz, D.; Montgomery, H.; Longaker, E. D., and Sayen, A.: Effects of Vasodilator Drugs and Other Procedures on Digital Cutaneous Blood Flow, Cardiac Output, Blood Pressure, Pulse Rate, Body Temperature and Metabolic Rate, Am. J. M. Sc. **218**:669, 1949.

change in the calf muscle circulation. The "k" after body heating was 0.029, compared with the control of 0.030, an insignificant difference.

COMMENT

The shifting of cutaneous blood flow among extremities has recently been emphasized by DeBakey and co-workers.[6] This phenomenon has been called by them the "borrowing and lending phenomenon," or hematokinesia. They demonstrated decreased skin blood flow in the contralateral extremity following sympathetic paralysis. The relationship of skin temperature to muscle temperature was studied by Friedlander and co-workers.[1] They found that muscle temperatures usually did not parallel changes in the skin temperatures. They concluded that in a given extremity the skin circulation and the muscle circulation were under separate control. Horwitz, Montgomery, Longaker, and Sayen [4d] have stated that the cardiac output does not change after the use of heat and priscoline.® To support the large increase in skin blood flow, they postulate that vasoconstriction occurs in splanchnic or skeletal muscle vessels. Murphy and co-workers [4c] demonstrated a reduced calf muscle clearance of sodium after intravenous use of priscoline.®

Our results show that in the lower extremity blood is locally shifted between the skin and muscles and between muscle groups. When skin blood flow is increased by direct heat and priscoline,® calf muscle circulation is reduced. Neither of the agents has been shown to increase cardiac output.[4d] In order to maintain the increased skin blood flow, blood is shifted to the skin away from the muscles.

When blood flow was increased in the anterior leg muscles by forceful dorsiflexion, the circulation in the posterior calf muscles was reduced. This indicates that not only is blood shunted from muscle to skin but it is also locally shifted between muscle groups. Blood is shifted toward the muscles of higher metabolic demand.

The results of the experiments with heating the body were somewhat disappointing, in that on the average no change occurred in skin blood flow in the toes. However, they are interesting in that there was also no change in calf muscle circulation. Since skin blood flow did not increase, there was no necessity for the shifting of blood within the lower extremity.

These experiments serve to emphasize the conclusions of others [1] that in the treatment of peripheral vascular disease the skin and muscle circulation must be considered separately. They point to the need of further studies on the effects of peripheral vasodilators on the deep circulation. Because of the lack of an entirely satisfactory method of estimating muscle circulation in man, clinical trial of peripheral vasodilators in diseases involving the deep circulation has usually preceded controlled experimental observations. However, the indiscriminate use of peripheral vasodilators in many cases is of doubtful value and may be harmful. Freeman, Leeds and Gardner [7] have called attention to the precipitation of gangrene by the indiscriminate use of sympathectomy in severe obliterative peripheral muscular disease with low vasomotor tone. Lagen [8] has reported beneficial effects from the use of priscoline® in patients with intermittent claudication. Smith and co-workers [9] have reported symptomatic improvement with the use of this drug in patients with acute poliomyelitis. The results of these experiments, however, indicate that priscoline® may be harmful in such cases by reducing effective muscle circulation. Similarly the use of this agent in major trauma to the deep circulation and in phlebothrombosis would be of doubtful value and possibly harmful.

SUMMARY

Kety's method of measuring calf muscle circulation by the clearance of radioactive sodium has been used to study the shifting of blood in the lower extremity. Increased skin blood flow produced by direct heat and intravenously administered priscoline® (2-benzyl-2-imidazoline hydrochloride) was followed by a reduced calf muscle circulation. Heating the body produced no change in the skin blood flow of the lower extremity and no change in calf muscle circulation. When circulation in the anterior leg muscles was increased by exercise, the circulation in the antagonistic calf muscles was reduced. The clinical implications of these experiments are discussed.

CONCLUSIONS

1. Local shifting of blood occurs in the lower extremity between the skin and muscles and between muscle groups.
2. When cutaneous blood flow is increased by administration of direct heat and priscoline,® muscle circulation is reduced.
3. The use of this drug in patients with intermittent claudication and peripheral skeletal muscle disorders has no physiological basis.
4. Effective circulation is decreased in antagonistic muscles.

6. DeBakey, M. E.; Burch, G.; Ray, T., and Ochsner, A.: "Borrowing-Lending" Hemodynamic Phenomenon (Hemometakinesia) and Its Therapeutic Application in Peripheral Vascular Disturbances, Ann. Surg. **126**: 850, 1947.

7. Freeman, N. E.; Leeds, F. H., and Gardner, R. E.: Sympathectomy for Obliterative Arterial Disease: Indications and Contraindications, Ann. Surg. **126**: 873, 1947.

8. Lagen, J. B.: Priscoline As an Adjunct for the Relief of Vasospasm in Peripheral Vascular Disease, Am. Pract. Digest. Treat. **1**: 50, 1950.

9. Smith, E., and others: Clinical Management of Acute Poliomyelitis, J. A. M. A. **144**: 213 (Sept. 16) 1950.

Ascorbic Acid in Stress.—Stimulation of the adrenal cortex and release of adrenocortical hormones is invariably accompanied by depletion of adrenal ascorbic acid. Increased ascorbic acid utilization and requirements are observed in stress, especially if severe and associated with extensive tissue injury. Administration of corticotropin (ACTH), but not of cortisone, induces changes in ascorbic acid metabolism similar to but less severe than those observed in stress. . . . It has been shown that adrenocortical function is maintained even when the adrenals are markedly depleted of ascorbic acid. It seems likely, however, that ascorbic acid can be diverted from other tissues to the adrenals according to need. . . . Under normal conditions man is supplied with stores of ascorbic acid more than adequate to cope with the metabolic need of acute stress. Administration of ascorbic acid, however, would seem indicated in severe chronic stress, especially after traumatic injuries or burns, and during protracted stimulation of the adrenal cortex.—Conrad L. Pirani, M.D., Review: Relation of Vitamin C to Adrenocortical Function and Stress Phenomena, *Metabolism*, May, 1952.

J.A.M.A., June 28, 1952

GASTRIC TRIDERMAL TERATOMA IN INFANCY

SUCCESSFUL TREATMENT BY SUBTOTAL GASTRECTOMY

H. Lee Large Jr., M.D., McChord Williams, M.D., Charlotte, N. C.
and
Julian B. Neel, M.D., Thomasville, Ga.

Only one case of benign teratoma originating from and confined to the wall of the stomach has been previously described.[1] Ours is the second one of this type to be recorded.

REPORT OF A CASE

T. M., a 7-month-old infant, was admitted to the Charlotte Memorial Hospital on Dec. 22, 1950, because of hematemesis and melena. For two months the infant had been extremely pale. On Nov. 30, 1950, he vomited coffee ground material and passed a tarry stool. His local physician discovered pronounced anemia, for which the baby was admitted to a hospital elsewhere. Results of physical examination and x-rays of the gastrointestinal tract at that time were reported as normal. After two transfusions, the symptoms disappeared and the infant was taken home.

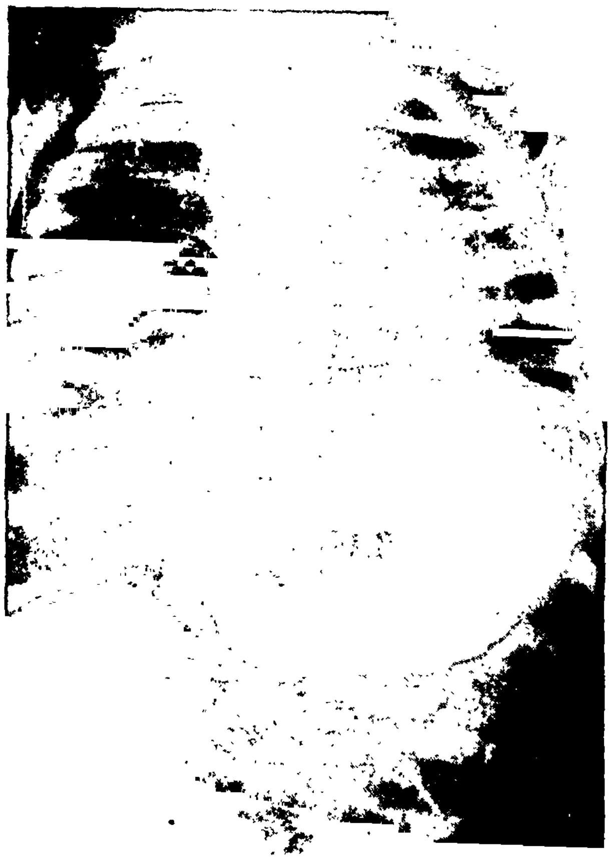

Fig. 1.—Preoperative roentgenogram illustrating large filling defect in the stomach.

Hemoptysis and melena reappeared a few days later, and the infant was readmitted to the Charlotte Memorial Hospital. Physical examination revealed a well-developed, well-nourished, slightly obese infant, weighing 20 lb. 2 oz. (9,129 gm.). The temperature was 101.6 F. Except for a conspicuous pallor, results of the examination were normal. Initial laboratory studies disclosed a red blood cell count of 1,600,000 with a hemoglobin of 4 gm. (27%, Sahli), and a leukocyte count of 16,500 per cubic millimeter, with 44 segmented forms, 53% lymphocytes, and 3% monocytes. Anisocytosis and polychromatophilia of erythrocytes were conspicuous. Although the mean corpuscular volume was normal, the mean corpuscular hemoglobin was only 27%. The urine was normal. The Kahn reaction for syphilis was negative. The guaiac test for blood in a tarry stool yielded a strongly positive result. The specimen contained no ova or parasites. X-ray studies of the barium-filled stomach showed a large, smooth-filling defect protruding into the lumen (fig. 1). Again an attempt to palpate the mass was not successful.

Occasionally the infant regurgitated his feedings, resulting in coffee-ground-streaked vomitus. One or two tarry stools occurred daily, and infrequent enemas produced tarry feces.

In preparation for laparotomy, transfusions were administered. The diet was supplemented with vitamins and iron. Prior to operation the erythrocyte count was 3,350,000, while the hemoglobin was 9.2 gm. (63%, Sahli). On the ninth hospital day the abdomen was entered through a right paramedian incision. The posterior wall of the antral portion of the stomach was implicated by a rather soft, apparently partially cystic tumor, which was confined to the wall of the organ. Specifically, it did not involve the omental attachment or the duodenum. Moreover, the peritoneal surface was not penetrated. It seemed by palpation that the mass protruded more into the lumen of the stomach than it did exteriorly. As visualized through a gastrotomy opening, the mucosa overlying the tumor presented several small erosions. Since it was believed that the tumor was a reduplication of the stomach, a subtotal gastrectomy was done. Approximately two-thirds of the stomach was removed, after which an anterior colic Hoffmeister gastrojejunostomy was done. During operation, 250 cc. of whole blood was administered.

Postoperatively intravenous fluids were administered constantly, at a rate of 10 to 12 drops per minute, for two days. An additional 150 cc. of whole blood was given. Continuous Wangensteen suction, instituted the day prior to surgery, was discontinued on the second postoperative day. On the third postoperative day fluids were administered orally in small quantities, after which oral feedings were gradually increased. Prior to the patient's discharge, on the 14th postoperative day, the result of a benzidine test for occult fecal blood was negative; the anemia was completely corrected, the erythrocyte count having risen to 4,760,000 and the hemoglobin to 13.5 gm. per 100 cc. (93%, Sahli). Postoperatively the patient lost only 2 lb. (907 gm.), half of which was regained by the discharge date.

Pathological Findings.—The specimen consisted of an excised caudad segment of stomach measuring 7 cm. along the greater and 4 cm. along the lesser curvature. The pyloric ring was not identified. A discretely delineated partially cystic tumor mass, measuring 5 cm. in diameter, was confined to the posterior wall of the stomach. The serosa and mesenteric attachments were not infiltrated. The overlying mucosa, presenting several superficial erosions and a shallow oval ulcer crater, measuring 0.8 cm. in diameter, was likewise not involved by tumor. In fact, at the margin of the lesion was a divided reflection of gastric muscularis surrounding the mass in such fashion that the latter appeared to be confined to the muscularis itself. Within the tumor, irregular, grayish white or pinkish white, solid areas separated variable-sized cystic spaces, measuring up to 2 cm. in diameter. The latter contained variously clear water, slightly yellow, turbid, or mucoid fluid, while the linings were smooth.

The histological findings were unanticipated. The tumor was a complex, well-differentiated structure, presenting a disorderly, haphazard conglomeration of tissues deriving from all three germ layers.

1. Epidermal Derivatives: Infrequent slit-like spaces were lined with a well-differentiated, stratified squamous epithelium, situated on a distinct basement membrane. Skin appendages in the form of various mature hair follicles and infrequent coiled sweat glands arose from the epithelium. In the vicinity of strati-

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From the Department of Pathology (Dr. Large) and the Department of Surgery (Drs. Williams and Neel), Charlotte Memorial Hospital. Dr. Large is now associated with the Presbyterian Hospital, Charlotte, N. C.

[1] Selman, A. N.: Complex Tridermal Teratoma of the Stomach (Benign): Case Report, Am. J. Surg. 59: 567-570, 1943.

fied squamous epithelium, as well as elsewhere, were irregular masses of a pale fibrillary brain tissue with infrequent ganglion cells. Particularly associated with, and often completely surrounded by, brain tissue were irregular spaces lined by columnar, occasionally ciliated, epithelial cells with poorly delimited bases and infrequent intracytoplasmic bodies suggestive of blepharoplasts (fig. 2). These ependymal elements were occasionally thrown into papillary folds with a vascular stroma resembling choroid plexus. The linings of a few spaces were partially composed of pigmented cuboidal cells suggestive of ocular choroid epithelium.

2. Entodermal Derivatives: The majority of lumens within the tumor were lined with entodermal structures, of one type, or in various combinations. Nonkeratinizing stratified squamous epithelium was in direct continuity with mucus-producing ciliated pseudotransitional mucosa of the respiratory type. The latter, as well as ciliated columnar epithelium, occurred frequently with other surrounding mesenchymal tissues normally present in bronchial walls (fig. 3). Here, also, were characteristic mucin-secreting pararespiratory glands. In still other portions were linings composed almost entirely of pale-staining columnar epithelium with but few goblet cells arranged in villus fashion as encountered in the small intestine. Indeed, in one such there were oxyphilic Paneth cells in the bases of the crypts. Colonic mucosa was represented by mucus-forming goblet cells lining deep crypts of Lieberkühn. These enteric structures contained smooth muscle within portions of their walls, and, in one area resembling ileum, there was a well-developed muscularis mucosa adjacent to which was the submucosal connective tissue, separating it from an inner circular muscle, beyond which was the outer longitudinal muscle layer.

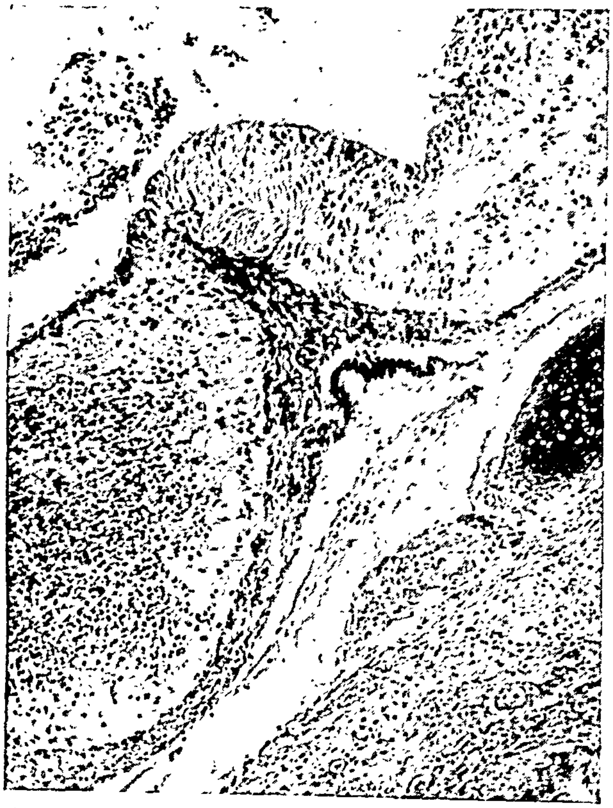

Fig. 2.—Photomicrograph demonstrating a broad band of brain tissue coursing from lower left to upper right. Ependymal elements line the cyst lumen in the upper left. Note the small dark island of cartilage at the midright border.

3. Mesodermal Derivative: Aside from the supporting stroma, vessels, and the orderly smooth muscle above, there were bits of smooth muscle without an obvious organized relationship to other structures. Hyaline cartilage, present in bronchial walls, was also present elsewhere, and one sliver of hyaline cartilage was in process of osseous transformation. This spicule of bone, as well as others, was partially surrounded by active osteoblasts producing osteoid. It should be pointed out that some cysts were lined by both entodermal and ectodermal elements mentioned above. It is readily apparent that the tumor is a benign tridermal teratoma arising within the wall, and probably within the muscularis, of the stomach.

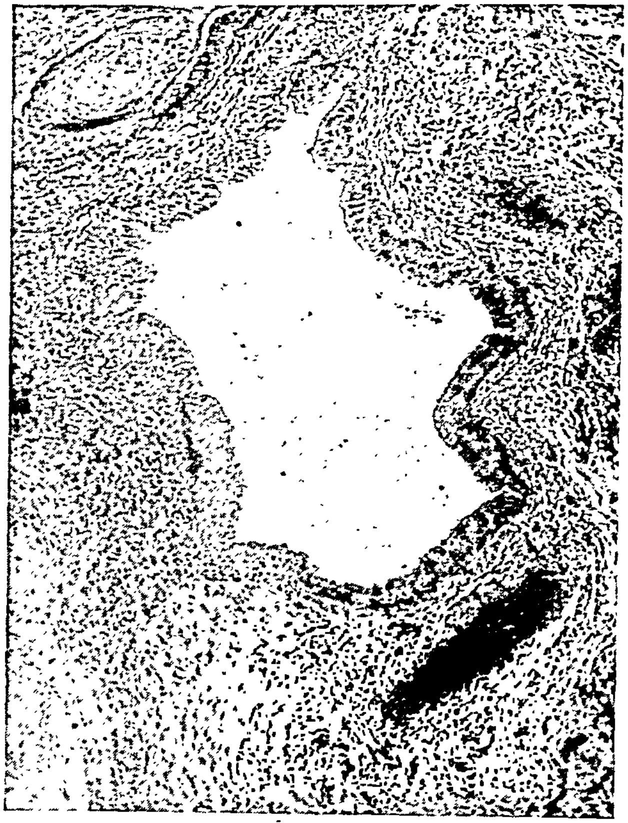

Fig. 3.—Photomicrograph of a structure resembling a bronchus. Pseudostratified ciliated columnar epithelium is surrounded by connective tissue in which are islands of embryonal cartilage on the right.

COMMENT

Our unfamiliarity with such wholly unexpected histological findings was justified by an exhaustive search of the literature, in which we discovered only one instance of a gastric teratoma, described by Selman [1] and referred to again elsewhere.[2] Selman was unable to discover another case prior to 1943, even by direct correspondence with many medical centers over the world.[2b] His patient, a 3-month-old white male, presented a nonsymptomatic palpable mass at routine pediatric examination. The tumor mass was excised, and the resulting defect in the stomach was simply closed. The pathological description leaves no doubt concerning the identity of the tumor. Our case adds nothing to knowledge of the basic defects that result in the development of teratoid tumors.

Gastric resection has been performed in infancy very rarely for any reason. The youngest patient with successful treatment found in the literature was 2 years of age.[3] Stohr's patient, a 22-month-old infant, died three days postoperatively.[4] The operations were performed for peptic ulcer, and the cases were reviewed by Bird and co-workers.[5] An unreported successful gastrectomy for fibrosarcoma of the stomach and adjacent structures was performed in a 4-year-old child by Gross.[6] No other successfully treated patients under the age of 2 years have been found in the literature.

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[2] (*a*) *Schleifstein, J.*: Teratoma of the Stomach, Sixty-Second Annual Report of New York State Department *of Health* **1**:*209*, 1941. (*b*) Selman, A. N.: Personal communication to the authors.

[3] Theile, B. P.: Über Geschwürsbildungen des Gastro-Duodenaltractus in Kindesalter, Ergebn. d. inn. Med. u. Kinderh. **16**:302-383, 1919.

[4] Stohr, R.: Über einen Fall von Ulcus *am Pylorus* bei einem 22 Monate alten Kinde als Folge einer Lotwasservergiftung, Zentralbl. f. Chir. **52**:*2644*, 1925.

Since gastrectomy has been performed so infrequently, the effect of the operation on development is of interest. Our patient at the most recent examination, at the age of 15 months (seven months after surgery), weighed 23 lb. (10,433 gm.); his height (standing) was 31 in. (81 cm.); his appearance was that of a normal infant. The erythrocytes numbered 3,740,000 and the leukocytes 9,000, with 25% neutrophils, 67% lymphocytes, 5% monocytes, and 3% eosinophils. The infant had recently had an infestation with ascaris lumbricoides; he had vomited and passed the parasites per rectum.

SUMMARY

Ours is the second recorded case of a tridermal teratoma of the stomach. It is the only case in which a subtotal gastrectomy has been done for removal of such a tumor. As far as we could determine, ours is the only patient under the age of 2 years with a successful subtotal gastrectomy described in the literature.

1400 Scott Ave. (Dr. Large).

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5. Bird, C. E.; Limper, M. A., and Mayer, J. M.: Surgery in Peptic Ulceration of the Stomach and Duodenum in Infants and Children, Ann. Surg. **114**: 526-542, 1941.
6. Gross: Personal communication to the authors.

Hydrotherapy.—There are certain facts which justify the use of baths for therapeutic purposes. One-third of the entire blood content of the body can be contained in the peripheral circulation and therefore it is easy to understand that by a regulated course of baths at varying temperatures the resources of the skin may be so stimulated and reinforced that the sensitiveness of the patient to changes in external conditions may be materially lessened. The contrast bath is an example of this. . . .

The thermal effects of immersion baths at varying temperatures are well known. . . . Then there is the mechanical effect which is of such vital importance in therapeutics. A body immersed in water is buoyed up by a force equal to the weight of water it displaces and the thrust upon the surface of a body immersed varies in direct proportion to the depth of the immersion. This buoyancy is used to enable still and paralysed joints to be moved actively through a greater range of movement and with less discomfort to the patient than is the case when the limbs are not so supported. The mineral content of the water exerts its influence. . . . All highly mineralized waters are . . . of great value in assisting the rehabilitation of a disordered locomotor system.

It is this rehabilitation of the locomotor system which has been the main concern of hydrotherapists throughout the ages and is still their major problem today. The disease syndromes grouped under the generic term "Rheumatism" have . . . been treated by some form of hydrotherapy from earliest times and still respond to such treatment. Hydrotherapy acts on the patient as a whole and not particularly on an affected joint and the necessity for considering the patient as a whole and not as made up of disorganized joints is impressed upon us by the work of Selye and Hench and their collaborators. If we accept the theory that joint lesions are the result of stress whether that stress be due to mental, physical or bacterial causes, then we see what an important place hydrotherapy must take in protecting the patient against such stresses.—W. Yeoman, M.D., Hydrotherapy and Its Place in Modern Medicine, Proceedings of Royal Society of Medicine, April, 1951.

CLINICAL NOTES

TEMPORAL ARTERITIS

REPORT OF A CASE IN WHICH INVOLVED CRANIAL VESSELS WERE TREATED BY SURGICAL DIVISION

James L. Turner, M.D.
and
Philip R. Van Horn, M.D., Oakland, Calif.

Hutchinson[1] first described temporal arteritis in 1890. Interest in this entity was renewed in 1932, when Horton, Magath, and Brown[2] described the clinical and pathologic features of arteritis involving the temporal vessels. Since that time an increasing number of cases have been reported in the literature, although to date the number of cases of histologically proved temporal or cranial arteritis remains relatively small. It seems likely that the disease is considerably commoner than the number of cases reported to date would indicate. In 1948 Crosby and Wadsworth[3] comprehensively reviewed the subject, and more recently Protas and Saidman[4] reviewed the cases in which the disease was proved by biopsy or autopsy.

Temporal arteritis represents a distinct clinical entity that usually affects persons in the older age groups and is characterized by local inflammatory changes along the course of one or more cranial arteries. Systemic reactions such as fever, malaise, anorexia, and weight loss are common. Although the temporal or other cranial vessels are most commonly involved, it is now recognized that the arterial involvement may be widespread throughout the body. Blindness occurs in a fairly high percentage of cases and results from inflammatory occlusion of vessels that supply the optic nerve or retina. The cause of temporal arteritis remains unknown, but the pathological characteristics have been well established. The mortality rate in the cases reviewed by Crosby and Wadsworth[3] was 12.5%.

Presumably because of the involvement of the cranial vessels and contiguous nerve fibers, headache has been one of the chief symptoms in patients with this disease. The headache has usually been pronounced, requiring analgesics regularly for relief. It has been noted on many occasions that the headache was either greatly relieved or disappeared entirely after a biopsy specimen was obtained by division of the involved cranial vessel.[5] This naturally suggested the surgical interruption of all the obviously involved superficial cranial vessels as a means of providing symptomatic relief from this most distressing symptom.

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1. Hutchinson, J.: Diseases of the Arteries, Arch. Surg. (London) **1**: 323-329 (April) 1890.
2. Horton, B. T.; Magath, T. B., and Brown, G. E.: An Undescribed Form of Arteritis of the Temporal Vessels, Proc. Staff Meet., Mayo Clin. **7**: 700-701 (Dec. 7) 1932.
3. Crosby, R. C., and Wadsworth, R. C.: Temporal Arteritis: Review of the Literature and Report of 5 Additional Cases, Arch. Int. Med. **81**: 431-464 (April) 1948.
4. Protas, M., and Saidman, A. G.: Temporal Arteritis: Critical Review of the Proven Cases with Report of an Additional Case with Pernicious Anemia, M. Ann. District of Columbia **17**: 34-42 (Jan.) 1948.
5. Crosby and Wadsworth.[3] Kaye, S. L.: Temporal Arteritis: Report of 7 Cases, Lancet **1**: 1039-1041 (June 18) 1949.

The relative rarity of this disease alone might warrant our citing an additional case. The primary reason, however, for reporting the following case is to direct attention to the symptomatic treatment of this disease by surgical division of the involved cranial vessels in an instance in which persistent headache was a chief complaint.

REPORT OF A CASE

A 67-year-old man of Greek descent was first seen on June 18, 1949, complaining of persistent headache. The headache developed two weeks previously, and he attributed it to having washed his hair in cold water. The head pain involved chiefly the vertex and was relieved temporarily by the use of acetylsalicylic acid. He felt fairly well otherwise and had no symptoms to suggest systemic reaction of any kind. Results of a review of the various systems were normal aside from a history of pain in both calf muscles, which developed with exercise and was relieved by resting. This had begun five years previously and since then had been somewhat progressive in nature. The family history and the patient's past history were not contributory. A suprapubic prostatectomy had been performed in 1947, because of benign prostatic hypertrophy.

The physical examination revealed a well-developed, well-nourished man who did not appear to be ill. The skin was clear. The ocular fundi revealed grade 2 sclerosis of the retinal arterioles (evaluated on the basis of grades 1 to 4) but were otherwise normal. The blood pressure was 160 systolic and 90 diastolic. The heart was not grossly enlarged, but there was a high-pitched systolic murmur at the apex. No pulsations could be felt in the dorsalis pedis or posterior tibial arteries in the left lower extremity. Pulsations could be felt in the posterior tibial artery on the right side, but the pulsations were diminished in amplitude. The dorsalis pedis artery on the right side could not be felt to pulsate. A small left inguinal hernia was present. The results of the remainder of the physical examination were not remarkable.

When the patient was seen one week later, he stated that the headache had increased in severity and had been persistent. In addition, he had a low-grade fever, with temperature of about 99 to 100 F. An examination of the blood revealed an erythrocyte count of 4,400,000 cells per cubic millimeter, with 13.5 gm. of hemoglobin per 100 cc. The leukocyte count was 12,350 per cubic millimeter, with a slight increase in the neutrophil count. An electrocardiogram was within normal limits. Results of x-ray examination of the chest were essentially negative. An x-ray examination of both legs revealed calcification along the course of the major blood vessels. The patient complained of not feeling well in a nonspecific way and had not been eating well. He attributed this to the headache. On July 1, 1949, he presented for the first time local inflammatory signs about a portion of the superficial temporal artery on the right side. There was some redness, swelling, and rather marked tenderness along the course of the temporal artery for a distance of several centimeters beginning slightly above the level of the right ear. No pulsations could be felt in this vessel, and the left superficial temporal artery was normal aside from moderate tortuosity and thickening. It became clear for the first time that the patient had temporal arteritis. An area about the involved vessel near its origin was infiltrated with 1% procaine hydrochloride so that we could note the effect on the head pain. The patient stated that after this procedure he experienced prompt relief from the headache, but it recurred as soon as the effects of the drug had worn off. Penicillin, 600,000 units, was given intramuscularly, and the headache was controlled by the use of analgesics. The patient was not seen again until six weeks later; during the interval he had lost 10 lb. (4.5 kg.) and complained of feeling "sick" but had no specific complaints other than the rather persistent headache, loss of appetite, and generalized weakness. Examination at that time showed that the superficial temporal artery on the left side presented changes much like those that had occurred on the opposite side six weeks previously. Examination of the ocular fundi revealed nothing new and nothing to suggest involvement of the retinal vessels. The right superficial temporal artery meanwhile remained somewhat tender and cord-like, and no pulsations could be felt along its course. It seemed certain from a clinical standpoint that this represented temporal arteritis involving both superficial temporal arteries. Because of the temporary relief obtained by infiltration of the involved vessels with procaine hydrochloride and the previous reports of relief of the headache following division of the involved cranial vessels incident to biopsy, we decided to divide both of the involved vessels near their origins just above either ear. Accordingly a section 8 mm. in length on the right side and one of 2.5 mm. on the left side were removed under local anesthesia, with prompt and rather dramatic relief of the headache. Microscopic examination of the excised segments of blood vessels revealed inflammatory changes consistent with the diagnosis of arteritis (fig. 1 and 2).

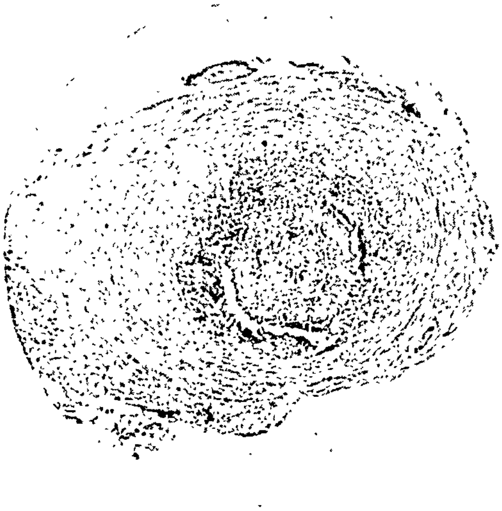

Fig. 1.—Right temporal artery involved by arteritis (× 20). Note that the lumen is reduced to a stellate-like slit. The larger clear zones are artefacts.

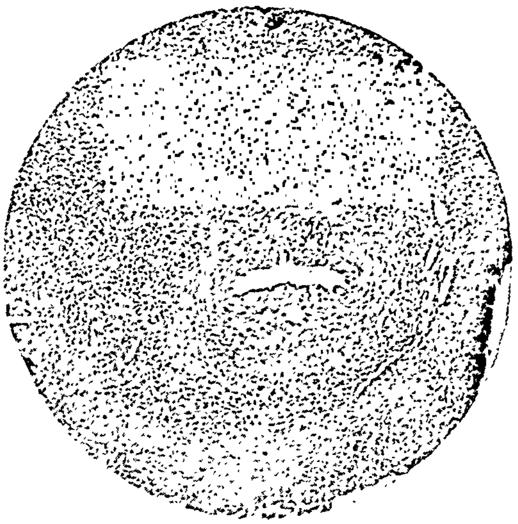

Fig. 2.—Section of left temporal artery involved by arteritis showing greatly reduced lumen with surrounding zone of inflammatory reaction (× 60). Several giant cells can be seen.

With the relief of the headache the patient began to feel better generally and to regain some of the weight that he had lost. For the next several months following the operative procedure, he continued to have a rather fast pulse rate, averaging about 100 beats per minute, but he was free of fever and headache. The sedimentation rate, which had been considerably elevated from the onset of his illness, remained significantly elevated for the next several months. Six months after the operative procedure it was 24 mm. after one hour. When the patient was last seen, approximately two years after the onset of symptoms, his weight had increased to 172 lb. (78 kg.) and he felt well. He had returned to work. The previous cord-like appearance of the involved temporal arteries had completely disappeared, and the remains of the superficial temporal arteries on either side could be identified only with considerable difficulty. The sedimentation rate was 12 mm. after one hour. The white blood cell count was 7,750 per cubic millimeter, and the red blood cell count was 4,700,000 per cubic millimeter, with 14 gm. of hemoglobin per 100 cc.

COMMENT

The removal of a section of the involved cranial arteries provides a means of definitely establishing the diagnosis of temporal arteritis and at the same time divides those structures that are in close proximity to the involved vessel, including the sympathetic nerve fibers. The relief of the head pain following such procedures is presumed to come about through the sympathectomy thus performed. If a patient has obvious involvement of one or more cranial vessels with what appears to be arteritis and receives temporary relief from infiltration of a segment of the vessel with procaine, then it is reasonable to assume that surgical division of the involved vessel will provide similar relief in a permanent fashion. Because of the distressing nature of the head pain and because the surgical procedure is well tolerated by these patients, it appears to be indicated in selected cases when persistent and severe headache is a chief compaint. As a result of the inflammatory process, either the involved vessels are completely occluded or the lumen is reduced to such a small caliber that for all practical purposes they cease to carry an appreciable amount of blood to the structures beyond the site of the arteritis. No ill-effects following the division of the superficial temporal arteries in this disease have been reported. In addition, division of the temporal arteries may prevent the direct extension of the inflammatory process to the vessels that supply the retina and the optic nerve on the same side. Such a process has never been definitely established, but the possibility is recognized in view of the anastomosis between the temporal vessels and the vessels to the retina as pointed out by Johnson, Harley, and Horton.[6] Resection of a segment of the artery along with the vein and perivascular sympathetic nerve fibers is best carried out close to the origin of the superficial temporal artery, but above the branches to the masseter muscle and the temporomandibular joint.

SUMMARY

A case of temporal arteritis involving both superficial temporal arteries is reported. The diagnosis was established by histological examination of segments of both involved vessels. Surgical division of both temporal arteries was carried out primarily as a therapeutic measure aimed at relieving the distressing headache. This resulted in prompt and complete relief of the head pain and was followed by improvement in the patient's general health.

400 29th St. (9) (Dr. Turner).

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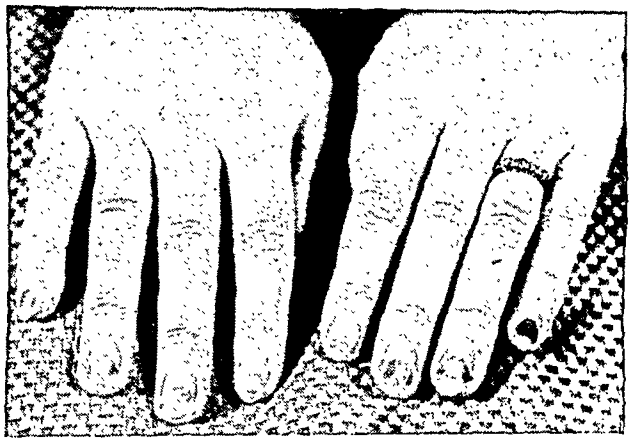
[6] Johnson, R. H.; Harley, R. D., and Horton, B. T.: Arteritis of the Temporal Vessels Associated with Loss of Vision: Report of 2 Cases, Am. J. Ophth. **26**: 147-151 (Feb.) 1943.

DISTURBANCE OF NAILS AND NAIL BEDS PRODUCED BY ARTIFICIAL FINGERNAILS

Gerald M. Frumess, M.D.
Henry M. Lewis, M.D.
and
Egbert J. Henschel, M.D., Denver

During the latter months of 1947 and in 1948, a new disease of the fingernails was widely reported in the medical literature.[1] It was caused, invariably, by nail "undercoats" or "base-coats" and was manifested by pigmentation of the fingernails, separation of the nails from the nail beds (onycholysis), accumulation of warty debris beneath the free edges of the nails (hyperkeratosis), and tenderness of the finger tips. The cause was obviously local and not systemic.[2] No dermatitis of the face, eyelids, neck, or conchae was associated, as in the common type of allergic-eczematous dermatitis due to nail polish.[3] It was generally agreed that the mechanism responsible for the newly described disorder was on an allergic-eczematous rather than on a primary irritant basis.



Clinical appearance of fingernails seven weeks after application of artificial nails.

In the case herein reported, there were identical clinical manifestations following the use of artificial fingernails.

REPORT OF A CASE

M. F., a 36-year-old housewife, consulted us on Dec. 16, 1950. On Oct. 28, 1950, a beauty operator applied to her nails a set of ne-tebs® (Ey-Teb Sales Corporation, Newark, N. J.), a brand of artificial fingernails. The patient had had no previous disease of the nails. The artificial nails were applied with a special adhesive substance included in the trade package. The following day she removed the false nails and, before using any polish remover or other cleanser, noted a blue discoloration of all fingernails. Marked tenderness was elicited by pressure of the nail plate against the nail bed. During the next two weeks, keratotic thickening developed under the free margins of the nails, with accompanying redness, swelling, fissuring, and tenderness of the finger tips.

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[1] (*a*) Fanberg, S. J., and Sharlit, H.: Hyperkeratosis and Onycholysis After Use of New Nail Cosmetic, J. A. M. A. **137**: 785 (June 26) 1948. (*b*) Winston, B. H., and Sutton, R. L., Jr.: Onycholysis Due to Plastic Adhesive for Nail Lacquer, J. Kansas M. Soc. **49**: 371 (Sept.) 1948. (*c*) Darnell, T. F. B., and Coombs, F. P.: Onycholysis: Preliminary Report of Cases Following Use of Fingernail Base Coat, J. Missouri M. A. **45**: 758 (Oct.) 1948. (*d*) Sulzberger, M. B., and others: Allergic Eczematous Reactions of Nail Bed: Persistent Subungual and Ungual Changes Based on Contact with "Undercoats" Containing Artificial Resins and Rubbers, J. Invest. Dermat. **11**: 67 (July) 1948. (*e*) Laymon, C. W., and Rusten, E. M.: Disturbances of the Nails Produced by Base Coats, Minnesota Med. **31**: 1218 (Nov.) 1948.

[2] Sutton, R. L., and Sutton, R. L., Jr.: Diseases of the Skin, ed. 10, St. Louis, C. V. Mosby Company, 1939, p. 1419.

[3] Dobes, W. L., and Nippert, P. H.: Contact Eczema Due to Nail Polish, Arch. Dermat. & Syph. **49**: 183 (March) 1944.

At the time she was first seen in our office, the condition was fully developed, with pigmentation, onycholysis, and hyperkeratosis, indistinguishable from the manifestations in cases of nail disorders due to "base-coat." New nail plates at the proximal ends of the nails were emerging, with normal color and texture (see the accompanying figure). Patch tests on the skin of the patient elicited negative results both to the artificial nail and to the adhesive substance. The patient refused a patch test on a toenail, stating that a positive reaction would render walking difficult. No local therapy was administered. She recovered completely when the involved nail plates were replaced by new nail substance. As in the cases of disorders due to "base-coat," recovery, from the onset of the disorder, took about five months.

COMMENT

The nail disturbances in our patient unquestionably resulted from the use of artificial fingernails. She had used no nail preparations of any type for many weeks preceding the application of the artificial fingernails. These nails had been applied only once, less than 24 hours prior to the onset of her complaints. Several years previously she had used nail "base-coat" preparations on several occasions. This fact would satisfy exponents of the allergic-eczematous etiological mechanism requiring previous contacts with sensitizing eczematogenous agents. It would not, however, deny the possibility of a primary irritant mechanism as a cause of the disorder.

The pigmentation of the nails was not a superficial stain. Scraping one nail with a glass slide revealed that the pigment occupied the entire thickness of the nail plate. Reporters of disorders of the nails due to "base-coat" ascribe the pigmentation to hemorrhage in the nail bed. An effort was made to determine the ingredients of the artificial fingernails and of the adhesive substance. An inquiry addressed to the Ey-Teb Sales Corporation, distributors of ne-teb,® was not answered. The United States Food and Drug Administration analyzed a trade package of ne-teb® for us. They reported the presence of nitrocellulose in the artificial nail and stated that the adhesive substance contained cellulose nitrate dissolved in butyl acetate and an unidentified plasticizer. Analysis of various trade brands of "base-coat" products revealed similar chemicals, thus establishing the close relationship between the disorder due to "base-coat" and that described in this report.

SUMMARY AND CONCLUSIONS

A nail disturbance characterized by pigmentation, separation of the nail plates from the nail beds, accumulation of wart-like debris beneath the separated nail plates, and tenderness of the nail beds and finger tips following the application of artificial fingernails is reported. At the time of this writing there were no prior records of this occurrence in the medical literature. The clinical picture is characteristic and resembles, in all details, that seen in the cases of nail disorders due to "base-coat." The mechanism of the disorder is probably one of allergic-eczematous sensitization. Cosmetic distributors tell us that the use of artificial fingernails is becoming more widespread. It is believed, therefore, that more cases of this disorder are occurring and that physicians should be alerted to its existence.

2200 E. 18th Ave. (6).

MYCOTIC ENDOCARDITIS DUE TO CANDIDA ALBICANS

Ralph H. Kunstadter, M.D.
Helen MacLean, B.S.
and
Joseph Greengard, M.D., Chicago

During the past decade there has been an increasing interest manifested in systemic fungus disease as evidenced by the large number of reports in the literature. Actinomycosis, blastomycosis, coccidioidomycosis, histoplasmosis, torulosis, moniliasis, sporotrichosis, and aspergillosis represent a group of mycotic diseases that occur in the United States and that may become disseminated, often terminating fatally.[1] However, endocarditis due to fungi is exceedingly rare [2] and, to the best of our knowledge, has not been described in infancy and has been reported only once in a child under 15 years of age.[3]

Twenty-four cases of mycotic endocarditis have been found in the literature.[4] Among these, the organism was identified in 19 instances. In four cases an unidentified fungus was present, and in one case a fungus was identified in a blood culture but no autopsy was performed. In nine of the 24 cases, the disease was caused by Monilia [5]; in 8 it was proved by positive blood cultures and autopsy, and in 1 by positive blood culture without autopsy. In the nine cases Candida albicans was recovered in two, Candida parakrusei in six, and Candida guilliermondi in one. Five of the nine cases occurred in drug addicts. Ours is the second case of mycotic endocarditis in a child and the first case of endocarditis due to C. albicans to be reported in an infant.

REPORT OF A CASE

W. P., a 7-month-old white male infant, was admitted to Sarah Morris Hospital with a history of coughing from the age of one month. Since two weeks prior to admission, he had had fever.

From the Sarah Morris Hospital for Children and the Department of Bacteriology and Virology, Michael Reese Hospital.

[1] Parrillo, O. J.: Disseminated Mycotic Disease: Report of 3 Cases, J. A. M. A. **144**: 747 (Oct. 28) 1950.

[2] Wikler, A., and others: Mycotic Endocarditis: Report of a Case, J. A. M. A. **119**: 333 (May 23) 1942.

[3] Cassels, D. E., and Steiner, P. E.: Mycotic Endocarditis: Report of a Case with Necropsy: Review of the Literature, Am. J. Dis. Child. **67**: 128 (Feb.) 1944.

[4] (*a*) Cassels and Steiner.[3] (*b*) Joachim, H., and Polayes, S. H.: Subacute Endocarditis and Systemic Mycosis (Monilia), J. A. M. A. **115**: 205 (July 20) 1940. (*c*) Wikler.[2] (*d*) Pasternack, J. G.: Subacute Monilia Endocarditis: A New Clinical and Pathologic Entity, Am. J. Clin. Path. **12**: 496 (Sept.) 1942. (*e*) Jervell, O.: Leptothrix in the Blood in a Case of Endocarditis, Norsk mag. f. lægevidensk. **83**: 36 (Jan.) 1922. (*f*) Wagner, G.; Maiorov, G., and Steriopoulo, S.: Streptothrix Infection: Case of Endocarditis Lenta Caused by Streptothrix and Its Mutants, Russk. Klin. **8**: 315 (Sept.) 1927. (*g*) Alestra, L., and Girolami, M.: Endocarditis Caused by Nocardia, Policlinico (sez. med.) **44**: 441 (Sept.) 1937. (*h*) Uhr, N.: Bacterial Endocarditis: Report of a Case in Which the Cause Was Actinomyces Bovis, Arch. Int. Med. **64**: 84 (July) 1939. (*i*) Russell, W. O., and Lamb, M. E.: Erysipelothrix Endocarditis: A Complication of Erysipeloid: Report of Case with Necropsy, J. A. M. A. **114**: 1045 (March 23) 1940. (*j*) Friedman, N. B., and Donaldson, L.: Systemic Mycosis with Mycotic Endocarditis, Arch. Path. **27**: 394 (Feb.) 1939. (*k*) Sacks, I., and Ata, G.: Subacute Bacterial Endocarditis from Infection of Monilia Albicans, South African M. J. **15**: 456 (Nov. 22) 1941. (*l*) Geiger, A. J.; Wenner, H. A.; Axilrod, H. D., and Durlacher, S. H.: Mycotic Endocarditis and Meningitis: Report of Case due to Monilia Albicans, Yale J. Biol. & Med. **18**: 259 (March) 1946. (*m*) Wedding, E. S.: Actinomycotic Endocarditis: Report of 2 Cases with a Review of the Literature, Arch. Int. Med. **79**: 203 (Feb.) 1947. (*n*) Zimmerman, L. E.: Candida and Aspergillus Endocarditis, with Comments on the Role of Antibiotics in Dissemination of Fungus Disease, Arch. Path. **50**: 591 (Nov.) 1950. (*o*) Wolfe, E. I., and Henderson, F. W.: Mycotic Endocarditis: Report of a Case, J. A. M. A. **147**: 1344 (Dec. 1) 1951.

[5] Wikler.[2] Joachim and Polayes.[4b] Pasternack.[4d] Sacks and Ata.[4k] Geiger, Wenner, and Axilrod.[4l] Wolfe.[4o]

The cough was worse at night and was aggravated by motion. Pertussis was suspected. A rash developed after the infant ate certain green vegetables. An adequate diet was offered, but he ate poorly and his physical development was retarded. He had received no immunizing injections.

Physical examination revealed that the infant weighed 13 lb. 5 oz. (6,038 gm.) and had a paroxysmal cough, with temperature of 103.4 F and a respiratory rate of 40. The eyes, ears, nose, and throat were normal. There were suppressed breath sounds over the right lung posteriorly. There were no abnormal cardiac findings. The liver and spleen were not enlarged, and the extremities appeared normal. Roentgenologic examination revealed evidence of a pneumonic process in the middle lobe of the right lung, partial atelectasis of the lower lobe of the right lung, and a slight displacement of the mediastinum to the right. The initial blood cell count showed hemoglobin 10.8 gm., red blood cells, 4,760,000, white blood cells, 15,500, polymorphonuclear cells 87, and lymphocytes 11%. The urine was normal.

Hospital Course.—Sulfadiazine was administered for three days, and the fever subsided in 48 hours. However, abnormal pulmonary findings persisted, and 12 days after the infant's admission to the hospital the temperature rose to 102 F. Sulfadiazine was again administered, and treatment was continued for seven days. The fever subsided in four days, but there was no change in the chest findings. On the 32nd hospital day, bronchoscopy revealed an inflamed tracheobronchial mucosa and an increased amount of mucoid material was noted. The following day the temperature was 103 F, and sulfamerazine was administered for five days. In 48 hours the temperature was again normal. However, on the 42nd hospital day oral and perioral thrush was noted. Methylrosaniline chloride was applied topically, and sulfathiazole was administered for six days, after which sulfamerazine was given for five days.

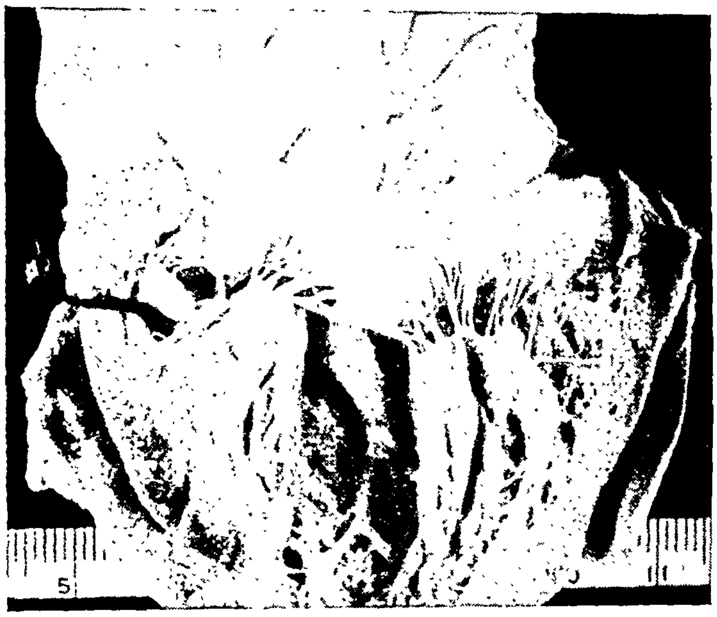

Fig. 1.—Small verrucae are present on the leaflets of the mitral valve at the line of closure.

The local lesions cleared considerably about the mouth, but there was still a pulmonary pathological condition. During the following week the temperature rose and persisted and there was a spread of impetiginous-like lesions to the face, back, and hands. On the 55th hospital day, penicillin was given intramuscularly in a dosage of 10,000 units every three hours for one week. However, during this time there was an extension of the pneumonic process in the right lung and evidence of pathological change in the lower lobe of the left lung. Furthermore, the skin lesions responded poorly. On the 63rd hospital day the temperature rose to 106 F and was accompanied by dyspnea, cyanosis, convulsions, and a diffuse papular rash on the entire body. The spinal tap was unsuccessful. At this time the white blood cell count was 47,350, predominately granulocytes. A blood culture made on the 63rd day revealed C. albicans, and at this time the palate was covered with thrush. The liver was palpable 3 fingerbreadths below the costal margin and the spleen 1½ fingerbreadths. The leukocyte count had increased to 56,300. There were no abnormal cells. The infant died on the 66th hospital day with the maculopapular eruption still present, extensive thrush involving the mouth, and petechiae on the toes.

Laboratory Data.—The blood cell count showed nothing significant other than pronounced granulocytic leukocytosis, the white blood cell count varying between 47,350 and 56,300 shortly before death. The urine repeatedly showed grade 1+ to 3+ albumin, an occasional leukocyte, and an occasional hyaline cast. Blood cultures made shortly after admission showed no growth, but on the 63rd day a heavy growth of C. albicans was obtained. C. albicans was obtained from the mouth lesions on the 43rd day. The stools revealed no significant pathogens.

Pathological Observations.[6]—External Examination: The body was that of a poorly nourished, poorly developed, white male child that appeared to be about 7 to 8 months of age, measured 70 cm. in length, and weighed about 6,900 gm. The skin and conjunctiva were severely jaundiced. There were a few minute reddish spots on the skin of the lower extremities. Both ankles presented evidence of a recent venesection.

Internal Examination: The panniculus adiposus measured up to 2 cm. in thickness in the midline. The large cavities contained no free fluid, and the serosal surfaces were smooth and glistening except for an occasional petechial hemorrhage and pronounced yellowish discoloration. The liver edge reached 4 cm. below the costal margin. The large veins were distended with blood. The pericardial sac was normal.

The heart was normal in size and shape. The chambers were normal. The endocardium of the intraventricular septum in the left ventricle presented a small abscess surrounded by a hemorrhagic halo. The valvular orifices were normal in size. The leaflets of the mitral valve exhibited small yellowish nodules at the line of closure (fig. 1). The myocardium exhibited a severe cloudy swelling. The coronary ostia and arteries and the aorta were normal.

The lungs were normal in size and shape. Many large areas, especially in the upper right lobe, were atelectatic. On section, there was moderate to severe edema and hyperemia. The tracheobronchial tree contained some frothy material, and the mucosa was moderately reddened. Several of the hilar lymph nodes were very large and on section disclosed gray-yellow edematous surfaces.

The liver was enlarged. The capsular surface presented a few small yellowish areas, which on section appeared wedge shaped and were peripherally located. The liver parenchyma presented a severe cloudy swelling and chronic passive hyperemia. The gallbladder was slightly distended and contained rather thick bile. The extrahepatic bile ducts were also somewhat dilated, and surrounding them were a few very large lymph nodes with gray-yellow cut surfaces. The spleen was slightly enlarged. The capsule was smooth on section. The pulp was stripped off with ease, and the follicles were prominent. The pancreas showed no gross changes.

In the gastrointestinal tract, the esophagus, stomach, and jejunum exhibited no changes of note. The Peyer's patches and the solitary follicles of the ileum were rather large. The mucosa of the colon was covered by an excessive amount of mucus and had a reddened mucosa with superficial ulcerations. This was more pronounced in the ascending portions and the appendix, where, in addition, the serosa was hyperemic. The mesenteric lymph nodes were enlarged, soft, and edematous.

The kidneys were normal in size and shape. Their capsules stripped with ease, revealing smooth yellow-brown surfaces. Section disclosed a severe cloudy swelling, and the corticomedullary markings were indistinct. The pelves, ureters, and urinary bladder were grossly normal. The adrenals, thymus, and testes showed no gross changes. The brain presented slight edema and a yellowish discoloration. No other gross changes were seen.

Microscopic Description.—Heart: The myocardial fibers exhibited a moderate degree of cloudy swelling. Small accumulations of round cells were present in the interstitial tissue. Many of the smaller blood vessels contained clumps, which with Giemsa stain appeared as short, thick rods. Sections through the endocardium and mitral valvular verrucae showed nodules composed of clumps of organisms surrounded by small, round cells. These were for the most part histiocytes and lymphocytes (fig. 2).

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[6] Autopsy was performed by Dr. Otto Saphir, Pathologist, Michael Reese Hospital.

Lungs: Section disclosed many focal areas where the alveoli and small bronchi were filled with polymorphonuclear leukocytes and lymphocytes. The vessels were dilated and engorged with blood. Sections through the trachea revealed some superficial ulceration of the mucosa, which presented a slight round cell infiltration. The hilar lymph nodes showed pronounced lymphocytic hyperplasia.

Liver: There was a severe cloudy swelling and chronic passive hyperemia. Occasional small groups of hepatic cells showed early necrosis.

Spleen: The follicles were large and distinct, containing numerous polymorphonuclear leukocytes. The pulp was hyperemic.

Pancreas: No histopathological changes of note were seen in the pancreas.

Gastrointestinal tract: Section disclosed a moderate increase of the lymphocytic elements. In the colon the mucosa was covered by an excessive amount of mucus.

Kidneys: The tubular epithelium exhibited some cloudy swelling. There was some hyperemia.

Adrenals, testes, and skin: No histopathological changes of note were seen in the adrenals, testes, and skin.

Bone Marrow: The bone marrow was rather cellular, with cells in all shapes of development.

Pathological Diagnosis.—The pathological diagnosis was acute bacterial endocarditis and myocarditis due to C. albicans; moniliasis and pyemia with multiple abscesses in the myocardium and liver; severe cloudy swelling of the myocardium, liver, and kidneys; focal necrosis of the liver; jaundice (severe); acute necrotizing tracheobronchitis; patchy atelectasis of the lungs; chronic passive hyperemia and edema of the lung; chronic mucous colitis; and chronic lymphoid hyperplasia.

Mycological Study.—At autopsy cultures were made of heart blood obtained by aspiration before sectioning, and of liver tissue. White opaque colonies of budding yeast cells grew promptly from both sources. All postmortem and antemortem strains were subsequently confirmed to be C. albicans on several occasions.[7] Terminal double-walled refractile chlamydospores on branching mycelia were promptly formed on corn meal agar slide cultures. There was no surface growth in Sabouraud's broth. Acid and gas were uniformly produced from glucose and maltose; acid was produced only from sucrose; and lactose was never fermented.

COMMENT

This case of endocarditis and sepsis due to C. albicans is of extreme interest for two reasons: first, because it is the first case to be reported in an infant and, second, because the course of events during this infant's illness provoke interesting speculation as to the causation and pathogenesis of systemic mycosis.

This infant had chronic pulmonary disease of approximately six months' duration, for which no specific causative factor could be determined. During repeated bouts of fever, sulfonamides were administered with only temporary abatement of the fever and no improvement in the pulmonary pathological condition. Then, after bronchoscopy on the 32nd hospital day and the subsequent administration of sulfonamides and penicillin, there appeared, for the first time, oral and mucocutaneous thrush. The thrush responded poorly to treatment, a generalized maculopapular eruption developed, and the blood culture became positive for C. albicans during the period of penicillin administration. Thus, in retrospect it appears that dissemination of the C. albicans infection present in the oral cavity probably occurred through a traumatized and inflamed tracheobronchial mucosa. Furthermore, it is highly probable that penicillin enhanced the monilial dissemination. Whether the endocarditis was primary or secondary to a generalized sepsis is speculative—it could have been either.

Recent reports give convincing arguments that antibiotic therapy may be an important factor in the dissemination of Candida and other mycotic infections. Foley and Winter[8] recently warned of the potential significance of the phenomenon of apparent growth enhancement of micro-organisms by penicillin, streptomycin, and other antibacterial substances. They found that a single injection of penicillin on the chorioallantoic membrane of 10-day-old chick embryos increased the mortality resulting from Candida albicans stellatoidea or C. albicans infection. A similar enhancing effect was observed in rabbits infected with this organism treated with penicillin intramuscularly. On the basis of in vitro experiments, they suggest that metabolic stimulation of Candida by penicillin occurs and an "increased production and release of toxins or antigens precipitating allergic phenomena similar to the Herxheimer reaction in syphilis may be related to the in vivo effect of penicillin as well."

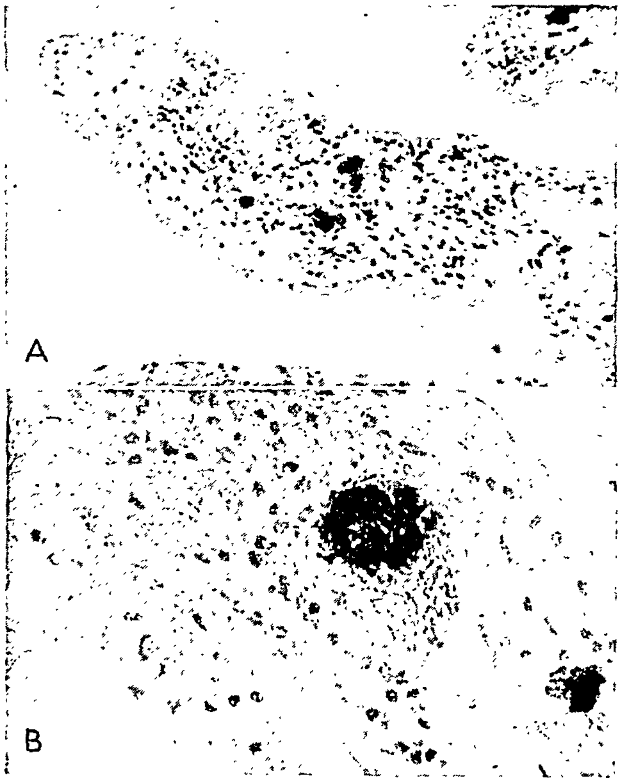

Fig. 2.—Sections through the endocardium and verrucae of the mitral valve showing clumps of organisms surrounded by small round cells consisting principally of lymphocytes and histiocytes. *A,* × 200. *B,* × 250.

The theory of antibiotic growth enhancement proposed by Foley and Winter is further substantiated by the experiments of Campbell and Saslaw.[9] They found that incorporation of streptomycin into a synthetic liquid medium enhanced the growth of laboratory strains of Sporotrichum schenkii, Coccidioides immitis, Phialophora verrucosa, Trichophyton mentagrophytes, and Histoplasma capsulatum that had not been previously exposed to this antibiotic.

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[7] Martin, D. S.; Jones, C. P.; Yao, K. F., and Lee, L. E., Jr.: A Practical Classification of the Monilias, J. Bact. 34: 99 (July) 1937. Conant, N. F., and others: Manual of Clinical Mycology, Philadelphia, W. B. Saunders Company, 1944, p. 182.

[8] Foley, G. E., and Winter, W. D., Jr.: Increased Mortality Following Penicillin Therapy of Chick Embryos Infected with *Candida Albicans* Var. Stellatoidea, J. Infect. Dis. 85: 26 (Nov.-Dec.) 1949.

[9] Campbell, C. C., and Saslaw, S.: Enhancement of Growth of Certain Fungi by Streptomycin, Proc. Soc. Exper. Biol. & Med. 70: 562 (March) 1949.

Clinical evidence that antibiotics may be responsible for the increasing incidence of Monilia infection is further borne out by the recent papers of Geiger,[41] Gausewitz, Jones, and Worley,[10] Harris,[11] Zimmerman,[4a] Woods, Manning, and Patterson,[12] and Merliss and Hoffman.[13] Endocarditis due to Monilia did not develop in Geiger's patient until after prolonged intensive penicillin therapy. Gausewitz and co-workers [10] expressed the belief that the prolonged treatment with penicillin during the first hospital admission and chloramphenicol during the second admission may have been a significant factor in the wide dissemination of the lesions in their case of generalized moniliasis.

Harris [11] reported oral, vaginal, vulvar, and perianal monilial infection as frequent side-effects in the treatment of brucellosis with aureomycin or chloramphenicol. Zimmerman,[4a] in discussing his two cases of endocarditis due to Aspergillus, stated that penicillin may increase the virulence of certain mycotic infections and suggested that in these two cases the antibiotics used may have permitted dissemination of localized infections. Woods and co-workers [12] recently reported 25 cases of clinical moniliasis following the therapeutic use of penicillin, aureomycin, and chloramphenicol for various infections. In vitro studies of four strains of Candida showed that there was no evidence that any of the three antibiotics either increased or suppressed the rate of growth of Candida in vitro. They do not believe that the antibiotics directly enhance monilial growth in vivo and are of the opinion that this supposition cannot serve as an explanation for the occurrence of clinical infections following their therapeutic use. They believe, however, that suppression of the intestinal bacterial flora coexisting with Candida and competing for nutrition in the same substrate is the most probable cause of monilial overgrowth and host infection. They further state that the clinical observations do not permit conclusions regarding the importance of changes in vitamin biosynthesis or other physiopathological reactions lowering host resistance to monilial invasion. They believe, nevertheless, that treatment with vitamin B complex seems to have some therapeutic value. Merliss and Hoffman,[13] in discussing steatorrhea following the use of antibiotics, also bring out the importance of disturbance of vitamin B metabolism following the use of antibiotics. However, they do not consider monilial overgrowth subsequent to suppression of the normal flora pathogenic, but rather secondary invaders.

Of great interest is Zimmerman's [4a] discussion on this same subject and his mention of Farber's seven cases of disseminated moniliasis in children who were treated with various chemotherapeutic agents for other diseases. The majority of these children received both penicillin and aureomycin. In five the original disease was leukemia, and in each of these cases the primary site of moniliasis was the esophagus or intestines. Most of them showed widespread fungous infection at autopsy. Detailed data on these cases have not been published.

Regardless of the factors responsible for the increased incidence of Monilia infection following the use of antibiotics, there is now sufficient evidence of the potential dangers of disseminated mycosis resulting from the use of antibiotics to indicate that patients should be carefully selected for prolonged antibiotic therapy.

SUMMARY

A case of endocarditis and sepsis due to Candida albicans in a 7-month-old white infant is reported. This is the 25th case of mycotic endocarditis to be recorded in the literature and the first in an infant. The possible explanation for disseminated mycotic infection in certain cases is presented. On the basis of the course of events in our own case and evidence presented in the literature, it is suggested that the use of antibiotics in certain instances may be responsible for the enhancement and/or dissemination of mycotic infection.

104 S. Michigan Blvd. (3) (Dr. Kunstadter).

THYROIDITIS DURING TREATMENT WITH CORTISONE

Eugene F. Traut, M.D., Oak Park, Ill.

Corticotropin (ACTH) and cortisone are known to affect thyroid function. Forsham reported experiments demonstrating a slowed iodine uptake in normal people taking cortisone or corticotropin. The decreased thyroid function may not be reflected in an increase of cholesterol in the blood, according to Conn. Hypothyroidism in patients receiving corticotropin or cortisone may also not be demonstrable by the usual method of measuring basal metabolism because of the known calorigenic effect of corticotropin and cortisone. Of the many complications of corticoid therapy, thyroiditis has not been reported to date.

REPORT OF A CASE

J. R. was first seen in December, 1949. He had been disabled by severe rheumatoid arthritis for months. All the joints in his extremities were painful, tender, and swollen. Large subcutaneous nodules were present below the elbows. While he was under observation in West Suburban Hospital, coronary thrombosis developed. Six weeks after the coronary episode he consulted another physician. He was given corticotropin in large doses for three months in spite of the recent coronary occlusion. His joint disease became worse. He left the hospital and took corticotropin at home for three months more, also without benefit. On his return to me on Dec. 14, 1950, his condition was worse than it had been on his first visit. He was given cortisone (cortone® [Merck]) orally in doses of 300 mg. the first day, 200 mg. the second day, and 200 mg. daily for two weeks. He rapidly improved, as judged by decrease in pain, stiffness, and swelling, and by his sense of well-being. The rounding of his face, present during treatment with corticotropin, increased while he was taking cortisone. On the 15th day of his cortisone treatment the dose was decreased to 100 mg. daily. He was receiving potassium chloride, 1 gm. daily. His arthritis became worse in March, 1951, and his temperature rose each afternoon to 101 F. He felt ill. A tender, brawny swelling in the left leg

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10. Gausewitz, P. L.; Jones, F. S., and Worley, G., Jr.: Fatal Generalized Moniliasis: Case, Am. J. Clin. Path. **21:** 41 (Jan.) 1951.

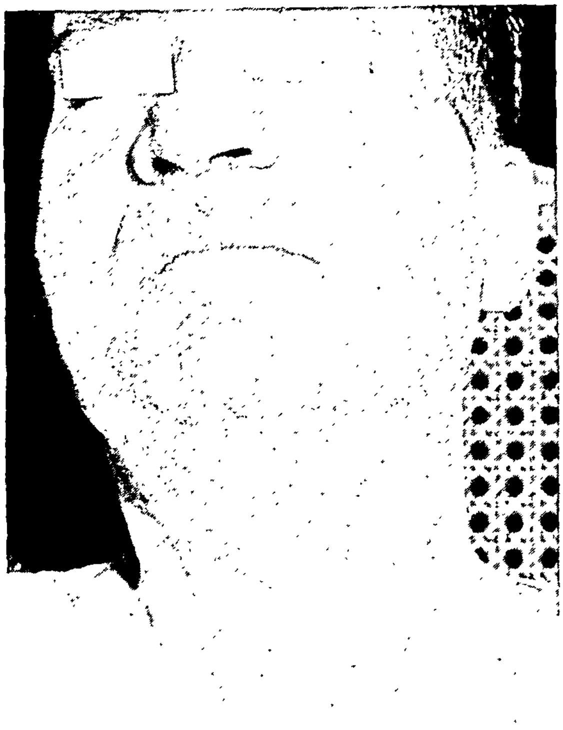
11. Harris, H. J.: Aureomycin and Chloramphenicol in Brucellosis, with Special Reference to Side Effects, J. A. M. A. **142:** 161 (Jan. 21) 1950.

12. Woods, J. W.; Manning, I. H., Jr., and Patterson, C. N.: Monilial Infections Complicating the Therapeutic Use of Antibiotics, J. A. M. A. **145:** 207 (Jan. 27) 1951.

13. Merliss, R. R., and Hoffman, A.: Steatorrhea Following the Use of Antibiotics, New England J. Med. **245:** 328 (Aug. 30) 1951.

and a tender swelling, the size of a goose egg, in the left lobe of the thyroid had developed (figure).

He entered the Presbyterian Hospital in Chicago on March 24, 1951. The laboratory findings were a hemoglobin level of 13.5 gm. per 100 cc., 4,330,000 erythrocytes, and 8,800 leukocytes. Of the leukocytes, 66% were neutrophils, 24% lymphocytes, 5% monocytes, 4% eosinophils, and 1% basophils. The erythrocyte sedimentation rate was 52 mm. per hour. There were 33 circulating eosinophils. The nonprotein nitrogen level of the blood was 28 mg., the uric acid level 3.7 mg., and the cholesterol level 205 mg. per 100 cc. A single attempt at measuring the metabolism in this patient, after the disappearance of his fever, gave a reading of +23%. Results of analyses of the urine and feces were normal. The conversion ratio of radioactive iodine was 23%. The uptake of radioiodine by external counting was 35%. Both of these figures were interpreted as being within normal limits by Dr. Gordon Brown. The diagnosis was severe rheumatoid arthritis, recent coronary thrombosis, thyroiditis, and thrombophlebitis.



Swollen left lobe of thyroid gland, indicating thyroiditis that had developed during cortisone therapy.

The left leg was treated by elevation and heat. Administration of cortisone was continued in doses of 100 mg. daily. He received 25 mg. of corticotropin intramuscularly every six hours from March 24 to April 2. He was given 300,000 units of procaine penicillin by injection daily. He also received 1 cc. of strong iodine (Lugol's) solution and 64 mg. of thyroid substance daily.

The patient's general condition improved. The swelling and tenderness disappeared from his leg, and his temperature became normal. The thyroid became less tender but continued to swell. The enlargement was semifluctuant. It reached its maximal size on May 8, 1951. Dr. Howard Armstrong advised continuing administration of the thyroid and the strong iodine solution. The thyroid swelling receded. The thyroid gland was thought to be normal in size and shape July 10, 1951. Administration of 64 mg. of thyroid daily has been continued.

The patient's condition, as he receives 100 mg. of cortisone and 64 mg. of thyroid daily, is better than at any time since his first visit in December, 1949. He is working with the minimal discomfort that is due to joint destruction in his knees.

715 Lake St.

AN IMPROVED SIGMOIDOSCOPE

Robert Turell, M.D., New York

After the construction of a sigmoidoscope with proximal and distal illumination,[1] continued research of the lighting systems resulted in the construction of a sufficiently powerful light bulb that provides excellent and bright illumination even if it is placed at the proximal end (near the examiner's eye) of the shaft of the scope. This improvement led to the construction of a simple endoscope that is useful for the nonproctologic examiner, such as the general practitioner or internist (parts 2 and 3 of the accompanying figure). Furthermore, additional refinements have been developed that make this endoscope very useful for the proctologist (part 10 of the figure).

The endoscope consists of a tubular shaft or sheath made of light noncorrosive metal (also available in plastic materials: bakelite® and lucite®) varying from 3 to 10 in. (7.5 to 25 cm.) in length and ⅝ to ⅞ in. (1.6 to 2 cm.) in diameter. The distal end of the sheath is slightly slanted, rounded, and smooth, for its easy and nontraumatic introduction into the anal canal. The handle with the light carrier is attached to the brim of the proximal end of the sheath.

The handle is easily attached to the brim of the shaft and is held securely in place by a screw-on mechanism. The connection for the electric current, obtained from a cell battery or the house current through a rheostat, is situated at the free end of the handle. The light bulb is attached to a U-shaped rod, which has a swivel action. The bulb lights up when it faces the circumference of the sheath and is turned off by swiveling of the light carrier to either extreme side. Diffusion of the light is prevented, or certainly greatly reduced, by a movable circular metal sheath, which can be extended into the opening of the sheath.

In my practice most of the anoproctosigmoidoscopic examinations are carried out with the simple endoscope as described to this point (parts 2 and 3 of the figure).

Additional refinements have been developed and incorporated that are frequently useful to all examiners and highly desirable for the proctologist (part 10 of the figure).

A metal cap containing a mildly magnifying lens can be made to fit snugly into the proximal opening of the sheath, thus closing it hermetically; this is imperative when insufflation is desired for the distention of the bowel. Air is introduced by means of a rubber bulb through the special metal tube provided with a Luer-locking device. Inflation and deflation of the bowel may be accomplished by the foregoing arrangement as well as by a similar device attached to the suction tube, to be presently described.

The suction tube is firmly attached to the interior wall of the sheath, terminating very close to its distal end and

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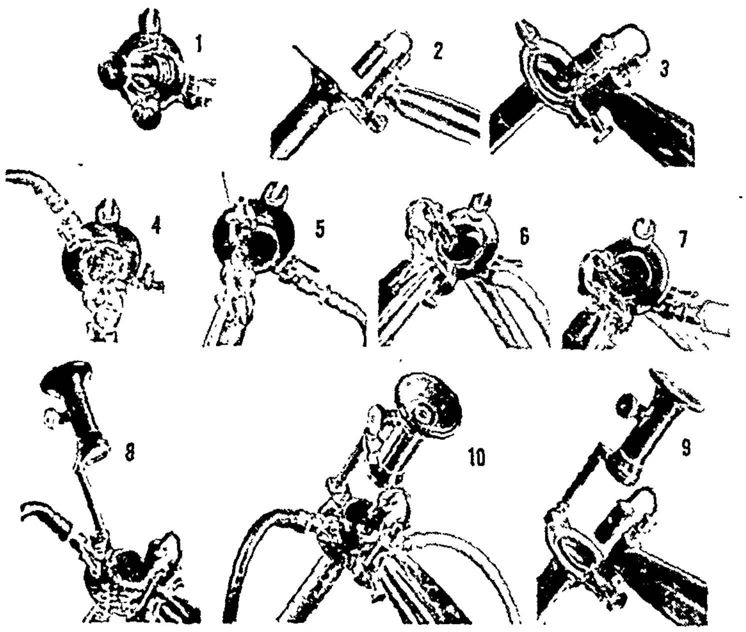
From Montefiore and Harlem Hospitals.

[1] Turell, R.: Sigmoidoscope with Proximal and Distal Illumination, Surgery 25:601 (April) 1949.

with a special Luer-locking device at its proximal end. The suction tube serves for the introduction and/or removal of fluid and for the removal of smoke resulting from the use of surgical diathermy. Through this suction tube culture mediums may also be injected and withdrawn, with the aid of a sterile syringe, for the procurement of washings containing intestinal flora for bacteriologic studies.

A still further refinement is a cap with one-half of the circumference occupied by the magnifying lens, while the remaining one-half contains an opening surrounded by a washer that makes possible the snug passage of a biopsy forceps. With the aid of insufflation, this cap facilitates the visualization and removal of small lesions that are otherwise hidden by mucosal folds and those located beyond the end of the scope but within reach of biopsy forceps. Provision has been made for the use of an established but a greatly magnifying lens with a focusing mechanism for the visualization of tiny lesions; this is secured to the brim of the shaft just opposite to the handle attachment. The magnifying lens may be used with the cap on or off.



1. Appearance of the head of the shaft of the scope with the obturator in place. 2. Handle and lighting system attached, with metal sheath about the light bulb farthest away (most common position) from shaft of scope. 3. Same as 2, with metal sheath about bulb moved into the opening of the shaft to avoid diffusion of the light (this extreme position is usually unnecessary). 4. Metal cap with mildly magnifying lens in situ sealing the scope hermetically. Note attachment of the rubber tube (and bulb) to the cap for introduction of air into the bowel. 5. Same as 4, but with light to the side of the cap and the attachment of the rubber bulb to the suction tube outlet. 6. Plain rubber tube attached to suction outlet for the removal of colonic fluid or smoke incident to fulguration. 7. Same as 6, but with Luer type of syringe attached to suction outlet (see text). 8. The greatly magnifying lens attached to the brim but not focused. 9. Lens and light bulb facing the interior of the shaft. 10. Appearance of the head of the scope with all parts attached thereto as used in sigmoidoscopic study.

SUMMARY

An improved anoproctosigmoidoscope with powerful proximal illumination is described. The lighting mechanism is very simple. This endoscope is ideal for the nonspecialist (general practitioner, internist, or general surgeon) as well as for the proctologist.

25 East 83rd St. (28).

MALARIA IN RETURNED VETERANS OF THE KOREAN WAR

CLINICAL OBSERVATIONS

Joseph T. Aquilina, M.D.
and
Jerome A. Paparella, M.D., Buffalo

Many cases of malaria have develcped among our military personnel who served in Korea. Fortunately, suppressive therapy has been effective in controlling the clinical manifestation of the infection in the endemic area. Malaria in returned servicemen from Korea has not yet become a problem to the medical profession, but potentially it may. The infection rate of malaria in Korea is high, and the disease is being diagnosed in a considerable number of veterans within short periods after their return to the United States.

We present herein the clinical observations on 15 patients with malaria admitted to the Veterans Administration Hospital, Buffalo, during the period June 11 to July 29, 1951. It is significant that since the opening of this hospital, in January, 1950, there were no diagnoses of malaria until admission of the first veterans of the Korean war, on June 11, 1951. All 15 cases involved military personnel who were either on pass or on furlough and who had had service in Korea. This is to be expected, inasmuch as Korea is classified as a moderately high endemic area in the malaria distribution maps.[1]

REPORT OF CASES

For conservation of space and because all the cases studied were similar, only two cases are reported in detail.

Case 1.—R. H., a 19-year-old white boy, was admitted June 11, 1951, with the complaint of recurrent episodes of headache, chills, and sweats. After 10 months' combat duty with the infantry, on May 19, 1951, he had left Korea; he arrived in the United States on May 26. He had been in good health until May 16, when headache developed, followed by severe shaking chills and profuse diaphoresis. These symptoms occurred over a four-hour period, after which he became drowsy, but after sleeping several hours he felt relatively well. From May 16 to May 26 the patient had recurrent episodes of headache, shaking chills, fever, and sweats. To the best of his memory these episodes lasted two or three days in succession, with only a day or two of intermittent relief. While on shipboard he experienced nausea and emesis on a few occasions, associated with chills and fever, but he attributed this to seasickness. Throughout the period May 16 to May 26 he received no medical treatment.

After his return to this country, he felt well until June 9, when headache, shaking chills, sweats, and fever developed. The next day he felt well again, but on June 11 he had another attack and reported to this hospital. On admission he stated that during the summer of 1950, while in Korea, he took prophylactic antimalaria medication, receiving one tablet (0.5 gm.) of chloro-

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Acting Chief, Medical Service, Veterans Administration Hospital, and Assistant in Medicine, University of Buffalo Medical School (Dr. Aquilina), and Resident in Medicine, Veterans Administration Hospital (Dr. Paparella).

Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are a result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

[1] Mackie, T. T.; Hunter, G. W., III, and Worth, C. B.: Manual of Tropical Medicine, Philadelphia, W. B. Saunders Company, 1945, p. 214.

quine phosphate every seven days. His last suppressive treatment was on May 6, 1951, 10 days before the first attack of symptoms.

Physical examination on admission revealed a temperature of 104 F (rectal), pulse rate 160, and blood pressure 104/50. The spleen was palpable and tender, and was four fingerbreadths below the left costal margin. The initial blood smear was positive for Plasmodium vivax. The white blood cell count was 3,800, with 4% eosinophils. Hemoglobin was 7.2 gm., sedimentation rate 62, and hematocrit 27. Serum bilirubin was 0.56 mg. per 100 cc. A flat roentgenogram of the abdomen on June 12 (fig. 1) revealed the presence of a large spleen, the lower pole of which extended to the level of the third lumbar veretbra.

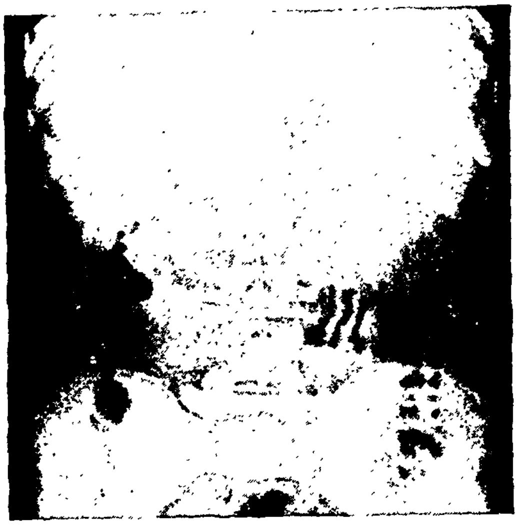

Fig. 1.—Abdomen of R. H. (case 1), showing enlarged spleen.

Initially he was treated with quinacrine hydrochloride, 0.2 gm. every six hours for a total of five doses and then 0.1 gm. three times daily. Thin blood smears, obtained nine hours after initiation of quinacrine hydrochloride therapy, revealed numerous malarial parasites. On the morning of June 12 the patient was afebrile and felt well. However, at 7:00 p.m. that same day his temperature rose to 103.6 F (rectal). Blood smears remained positive for malaria parasites. In consideration of these facts and because the patient was not responding to treatment with quinacrine hydrochloride, a change to chloroquine phosphate therapy was recommended. When this drug became available, on June 15, the patient was immediately given a dose of 1 gm., followed by 0.5 gm. within six hours, and then 0.5 gm. daily until a total dose of 4 gm. was given. It is notable that on admission the patient had moderately severe anemia, with 7.2 gm. of hemoglobin, and a hematocrit of 27. With control of the malarial infection, the hemoglobin rose to 10 gm. and the hematocrit to 35. Repeat blood smears for malarial parasites were negative, and the patient was discharged June 21, on completion of therapy.

Case 2.—J. B., a 22-year-old white man, was admitted June 18, 1951, with chief complaints of chills, fever, sweating, headache, nausea, and vomiting. He was stationed in Japan from July, 1949, to July, 1950, and was then sent to Korea. He left Korea on May 11, 1951, for return to the United States. While in Korea he was given suppressive therapy; he received the last dose on the day of departure. There was no history of previous malaria. He was well until June 17, 1951 (36 days after the last suppressive treatment), when he became chilly. This was followed by a severe bed-shaking chill, fever, and profuse diaphoresis. The next day he felt well until about 5:00 p.m., when he again experienced fever, chills, and sweating.

On admission to this hospital the patient was acutely ill, with a temperature of 103.8 F (rectal), pulse rate of 120, and blood pressure of 100/60. The spleen was not felt. The initial blood smear was positive for P. vivax. The red blood cell count was 4,000,000, white blood cell count 4,900, with 1% eosinophils, and hematocrit 38. Treatment with chloroquine phosphate was started; the patient received 1 gm. immediately, 0.5 gm. within six hours, and 0.5 gm. for two days. Eight hours after initiation of treatment his temperature returned to normal. He was discharged June 22.

ANALYSIS OF CASES

The pertinent clinical and laboratory data are summarized in table 1. Of the 15 patients, six gave a history of previous malarial attacks. All, however, had had suppressive therapy. The interval between the last suppressive treatment and the onset of symptoms of clinical malaria ranged between 10 and 294 days. The patient with the interval of 294 days (case 14) was in Korea for only a few weeks. It is possible that the long interval in his case could be explained by either a low infection or a high immunity to the disease. Excluding this patient, the interval between the last suppressive treatment and the onset of clinical malaria averaged 35 days.

In only three cases was a precipitating cause attributed to the onset of malaria. One patient (case 4) was on an alcoholic debauch prior to his first attack of malaria; one patient (case 8) was admitted with an abscessed tooth and cellulitis of the lower jaw, and the third patient (case 14) had mild, nonspecific urethritis.

All patients had a febrile episode, with temperatures ranging from 99 F (oral) to 106 F (rectal). Sinus tachycardia, with rates up to 160 per minute, accompanied each febrile episode. Symptoms consisted of chills, fever, and profuse diaphoresis in all patients. In addition to this, eight patients complained of headache, five other patients had nausea and emesis, and two patients were severely dehydrated and prostrated, requiring intravenously administered fluids. The spleen was enlarged and palpable in eight cases. In one instance (case 1) the spleen was enlarged to the level of the third lumbar vertebra (fig. 1).

All patients had anemia. The hematocrit ranged from 26 mm. to 46 mm., with an average of 40 mm. In addition to the lowered hematocrit, the average red blood cell count was 3,200,000, and the average hemoglobin 10.7 gm. In those cases in which serum bilirubin was determined, it was found to be normal. The sedimentation rate was elevated in all instances, averaging 39 mm. per hour. During or shortly after the febrile episode all patients showed leukopenia, either absolute or relative, with white blood cell counts ranging from 2,500 to 9,700 per cubic millimeter. The one patient with a white cell

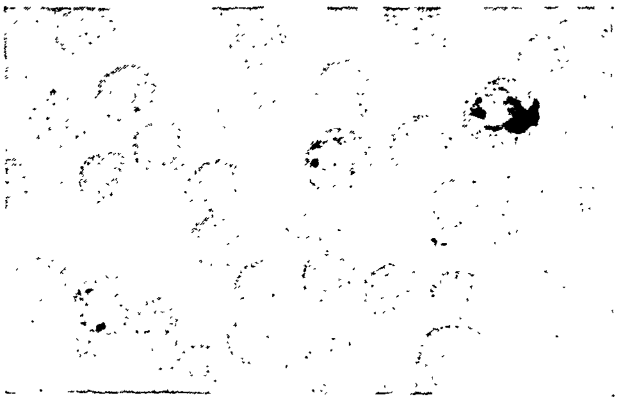

Fig. 2.—Blood smear (case 1), demonstrating Plasmodium vivax trophozoites in ring form (left and center) and older trophozoites displaying Schüffner's granules (upper right) (Wright's stain).

count of 13,000 had an abscessed tooth and cellulitis of the lower jaw. Eosinophil counts ranged from 1% to 10%, with an average of 3.6%. Table 2 shows the range of laboratory data in all cases. The response to chloroquine phosphate therapy was dramatic in all instances, most patients responding to treatment within an average of nine hours. The usual dosage of the drug was 1 gm. given immediately, 0.5 gm. within six hours, and 0.5 gm. daily for three to five days.

COMMENT

Clinical malaria in returned veterans of the Korean war may be expected within weeks after cessation of suppressive therapy. The interval between discontinuance of suppressive therapy and the onset of clinical malaria varies between 10 and 294 days. Military personnel who have served in endemic areas, such as Korea, and who have taken regularly prescribed doses of chloroquine phosphate have effective suppression and in most instances give no history of malaria while in an endemic area. After discontinuance of suppressive medication, those who have been infected with P. vivax will demonstrate clinical signs and symptoms of active malarial infection, either prior to or shortly after return to the United States.

In almost all the cases, the disease follows a similar pattern. There is an abrupt onset, manifested by rigor with frank chill and rapidly rising temperature (100 F to 106 F, rectal). There is usually tachycardia, followed by increasing headache and feeling of intense warmth. Next is a sweating stage, ushered in by profuse diaphoresis and gradually falling temperature. Elevated temperature may be accompanied by headache, backache and generalized aching, nausea, and emesis. A palpable spleen may be found, and clinical jaundice is usually not observed.

The clinical diagnosis of malaria due to P. vivax in the United States should not be difficult. The characteristic history and the clinical course of the paroxysm should suggest the diagnosis, which can be confirmed by the demonstration of the malarial parasites in one or more examinations of blood smears. In relapse of malaria of this type the parasites are almost always sufficiently present in the ordinary thin blood smear. The smears may be stained with Wright's stain,[2] counterstained with Giemsa's stain, and examined under the oil immersion lens. In all of our cases the diagnosis was made on the basis of the first thin blood smear with Wright's stain. Blood smears should be made as soon as the diagnosis is suspected, and needless time should not be spent waiting for any definite period of the malarial cycle. The parasites are almost always in abundance in the blood stream of the untreated patient in relapse.

It is generally possible to identify the exact type of malarial organism. In all 15 cases in this report the organism was the vivax strain. It is interesting to note that malaria due to P. malariae occurred rarely during World War II.[3] Infections due to Plasmodium falciparum seldom persist more than six months,[4] and relapse rarely occurs if the patient is adequately treated.[3]

TABLE 1.—*Summary of Clinical and*

Case No.	Last Previous Attack	Last Suppressive Treatment	Onset of Symptoms	Interval, Days	Precipitating Cause	Temperature (F)	Pulse Rate	Symptoms			
								Headache	Chills	Sweating	Other
1.	None	5/ 6/51	5/16/51	10	None	104/R	160	+	+	+	Drowsy
2.	None	5/11/51	6/17/51	36	None	103.8/R	120	+	+	+	Nausea Emesis
3.	April, 1951	See remarks	6/15/51	26	None	105/O	116	0	+	+	Nausea Emesis
4.	None	5/28/51	6/14/51	17	Alcoholic debauch	103.4/R	100	0	+	+	....
5.	May, 1951	6/ 1/51	6/29/51	29	None	102/O	88	+	+	+	....
6.	See remarks	4/26/51	6/26/51	60	None	104/O	100	0	+	+	....
7.	None	5/19/51	6/22/51	42	None	99/O	92	0	+	+	Anorexia
8.	May, 1951	7/ 2/51	7/16/51	14	Tooth extraction	101/O	90	0	+	+	....
9.	4/20/51	5/28/51	7/ 7/51	39	None	105/R	120	+	+	+	Severe prostration
10.	None	6/ 1/51	7/ 9/51	38	None	104/R	100	+	+	+	Anorexia Nausea
11.	5/16/51	See remarks	7/11/51	54	None	105/R	100	+	+	+	....
12.	None	5/ 1/51	7/14/51	74	None	103.4/R	122	+	+	+	....
13.	None	5/30/51	6/12/51	12	None	106/R	130	+	+	+	Prostration
14.	None	9/26/50	7/16/51	294	Urethritis	103/O	96	0	+	+	Backache
15.	Nov., 1950	6/20/51	7/23/51	33	None	104/R	120	0	+	+	Nausea Emesis

* Figures in parentheses indicate the number of fingerbreadths from left costal margin.
† Wintrobe (normal 47 mm.).

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2. Todd, J. C.; Sanford, A. H., and Stillwell, G. G.: Clinical Diagnosis by Laboratory Methods: Working Manual of Clinical Pathology, ed. 11, Philadelphia, W. B. Saunders Company, 1948, p. 233.

3. Most, H.: Management of Vivax Malaria in Veteran, Technical Bulletin 10-47, Veterans Administration, Aug. 4, 1948, p. 5.

4. Sapero, J. J.: New Concepts in Treatment of Relapsing Malaria, Charles Franklin Craig Lecture, 1946; Am. J. Trop. Med. 27:271 (May) 1947.

P. vivax is distinguished microscopically by the enlarged, pale red blood cell, with the characteristic blue, delicate rings of cytoplasm, each with a red bead of chromatin in the "signet ring" (fig. 2). There is usually one parasite per red blood cell. In most cases the ring-formed trophozoite showed pigment in the cytoplasm, in an enlarged cell containing Schüffner's stipling. However, this was not always present in all cells containing the growing P. vivax forms.

Another substantiating laboratory finding is leukopenia during the febrile period. This finding should be carefully stressed. If blood smears are negative and the white blood cell count is elevated, the condition is probably not malaria. In addition, anemia is usually present, as was noted in all of our cases. A positive diagnosis of malaria is based solely on the identification of the parasites in blood smears made during the acute phase of the disease.

Laboratory Data in Fifteen Cases of Malaria

	Laboratory Data								
Splenic Findings *	Hematocrit †	Sed. Rate ‡	Hgb. Gm.	RBC (Millions)	WBC	Eosin., %	Total Dose Chloroquine Phosphate, Gm.	Between Interval Start of Therapy and Normal Temperature, Hours	Remarks
Palpable (4)	27	62	7.2	3.0	3,800	4	4	8	Did not respond to quinacrine hydrochloride therapy (1.8 gm.): (last treatment with quinacrine, Walter Reed General Hospital 5/20/51)
....	38	49	10.4	4.0	4,900	1	2.5	8	....
....	40	30	11.8	4.0	8,000	1	4	4	....
Tenderness in splenic areas	*26*	*59*	*8.2*	*3.0*	*4,400*	*7*	*4*	*8*	Received one capsule of quinine before admission
....	43	14	12.6	4.3	9,700	7	3	4	....
....	26	60	7.8	3.0	2,500	10	3.5	16	Malaria 1943 and 1945 in India and Burma; none since
Palpable (2)	*35*	*34*	*9.6*	*3.9*	*3,100*	*1*	*3.5*	*0 §*	*Afebrile at time of admission*
Palpable (3)	46	..	13.0	4.7	13,000	4	4	4	WBC reflected inflammatory process, abscessed tooth
Palpable (1)	33	42	9.8	3.3	3,000	3	3.5	12	....
Palpable (3)	40	38	10.8	3.9	4,800	8	4	12	....
Palpable (4)	45	18	13.0	...	5,800	1	5	12	Interval represents treatment of last attack of malaria with chloroquine
Palpable (1)	43	33	11.4	4.4	7,500	1	4	8	....
Palpable (3)	43	36	11.4	4.3	3,100	1	3.5	16	....
....	40	35	10.8	4.1	3,600	2	3.5	8	Cystoscopy revealed mild urethritis and trigonitis
....	40	34	14.3	4.4	5,000	1	4	16	Nausea and emesis; unable to swallow drug at first

‡ Wintrobe (normal 10 mm.) in one hour.
§ The patient was afebrile during hospitalization.

TABLE 2.—*Laboratory Data, Compared with Normal*

	Low	High	Average	Normal (Male)
Hematocrit............	27	46	40	47 mm.
Sedimentation rate....	14	62	39	10 mm./hr.
Hemoglobin............	7.2	14.3	10.9	15 gm./100 cc.
Red blood cells.........	3.0	4.7	3.2	5,300,000/cu. mm.
White blood cells *.....	2,500	9,700	5,000	5,000-10,000/cu. mm.
Eosinophils............	1%	10%	3.6%	1-2%

* The patient with 13,000 white blood cells is excluded because of a concomitant inflammatory process.

The 15 patients in our series were successfully treated with chloroquine phosphate. Most and co-workers [5] have shown that chloroquine is the drug of choice for treatment of acute paroxysm of malaria due to P. vivax. It is three times more potent than quinocrine hydrochloride.[6] Its further advantages are as follows: 1. It is easy to administer. 2. It does not cause toxic symptoms. 3. It effects prompt defervescence. 4. It rapidly destroys parasites in the blood stream. No parasites are found 24 hours after initiation of chloroquine phosphate therapy.[5] Unlike quinocrine hydrochloride, it does not cause nausea and emesis and does not discolor the skin, and, unlike quinine, it does not cause symptoms of cinchonism. Chloroquine phosphate therapy terminates the acute attacks of vivax malaria; the drug has a suppressive effect when given in the amount of 0.5 gm. once a week.

As the term implies, suppressive treatment does not prevent infection, as demonstrated in these cases. All of our patients had had suppressive therapy prior to returning to this country. Properly used, however, the drug does suppress manifestations of malaria. Therefore, suppressive therapy is most useful for personnel who must stay in endemic malarial regions for prolonged periods.

Infection due to P. vivax seldom persists for more than two or three years. While it is theoretically possible to continue suppressive treatment for this length of time, to permit the malaria to eventually die out, without clinical symptoms, such procedure is not practical or without possible danger of chronic drug intoxication. It is of the utmost importance that the medical profession promptly recognize and adequately treat malaria, as one means of controlling its spread in this country.

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[5] Most, H., and others: Chloroquine for Treatment of Acute Attacks of Vivax Malaria, J. A. M. A. 131:963 (July 20) 1946.

[6] Sollman, T. H.: Manual of Pharmacology and Its Applications to Therapeutics and Toxicology, ed. 7, Philadelphia, W. B. Saunders Company, 1949, p. 520.

SUMMARY

1. Fifteen veterans of the Korean war who had been receiving antimalarial suppressive therapy were treated for malaria at the Veterans Administration Hospital. In all cases the diagnosis was proved by positive blood smears, which showed *Plasmodium vivax*. The onset of malaria, after the last suppressive treatment, ranged from 10 to 294 days. Splenomegaly was a common clinical finding, occurring in 8 of the 15 patients. All except one of the 15 had anemia and leukopenia; the patient who constituted the exception (case 8) had complicating concomitant infection. Eosinophilia of some degree was present in all cases.

Chloroquine phosphate was administered, the usual dosage being 1 gm. given immediately, 0.5 gm. within six hours, and 0.5 gm. daily for three to five days. The advantages of chloroquine phosphate over the antimalarial drugs are cited.

The diagnosis of malaria should be suspected in a veteran of the Korean war who complains of chills, fever, and sweats. A blood smear taken for demonstration of P. vivax will prove the diagnosis. According to our experience, a total of 4 gm. of chloroquine phosphate is sufficient to produce a remission.

KERATOSIS BLENNORRHAGICA SUCCESSFULLY TREATED WITH CORTICOTROPIN (ACTH)

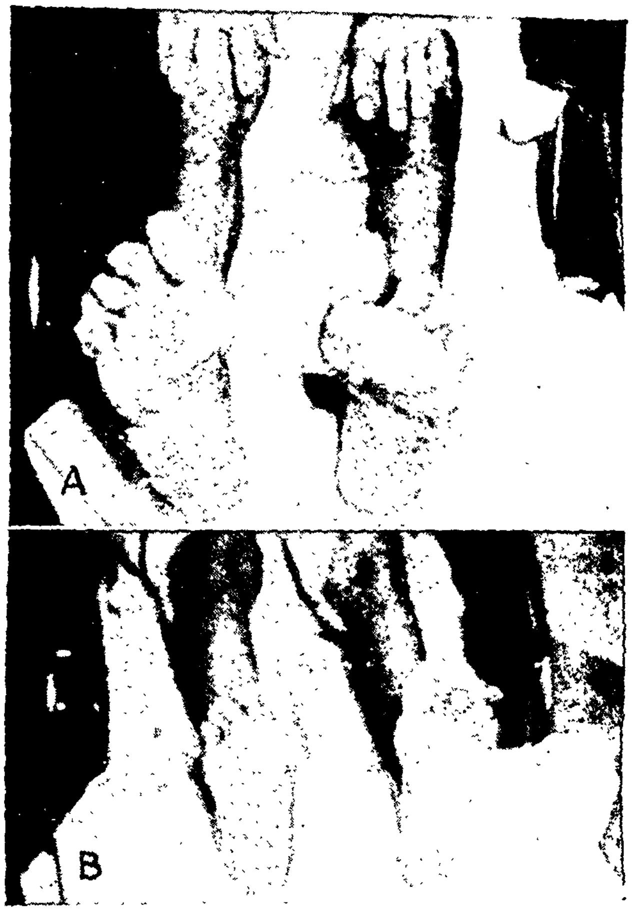
REPORT OF A CASE

Ralph M. Myerson, M.D.
and
Lawrence Katzenstein, M.D., Wilmington, Del.

The problems posed by the etiology and treatment of keratosis blennorrhagica are well known. A close but indeterminate relation to gonorrhea exists in many, but not all, cases. Recently pleuropneumonia-like organisms have been suspected of being causative agents.[1] Another theory is that the disease is a nonspecific "reaction pattern" to a variety of stimuli, one of which is the Gonococcus. According to Combes, Dietrich, and Cohen,[2] the consensus is that " . . . [keratosis blennorrhagica] is an allergic expression of a sensitized skin similar to the conception of the tuberculid reaction."

A large number of therapeutic agents have been used in keratosis blennorrhagica.[3] Recently variable results have been reported with the use of antibiotics.[4] In general, results have been most efficacious in cases in which there has been an active gonococcic infection.

In the following case, a prompt and apparently lasting cure was obtained with corticotropin (ACTH). Successful treatment of keratosis blennorrhagica with corticotropin suggests that the use of this drug might point to a clearer concept of the disease, in that it is further evidence that it may be a "reaction pattern."



A, appearance of skin lesions prior to the use of corticotropin. *B*, appearance of skin lesions after the use of corticotropin.

REPORT OF A CASE

A white man, 36, was admitted to the hospital on Aug. 10, 1950; his chief complaints were painful joints and a skin eruption of three weeks' duration. He had had rheumatoid spondylitis of the lumbar portion of the spine and sacroiliac joints since 1943. Except for chronic low back pain, the patient had been in his usual state of health until August, 1950, at which time he noticed general malaise and weakness. These symptoms progressed, and three weeks prior to his entry a crusted eruption developed on his feet, genitalia, and scalp. The lesions had progressed and were later accompanied by painful swelling of the right knee and left fifth finger.

The patient had had gonorrhea in 1942, at which time the urethral discharge had persisted for two months. There had been no discharge since that time. The past and family histories were otherwise noncontributory.

From the Medical Service, Veterans Administration Hospital; Consultant in Dermatology (Dr. Katzenstein).

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

[1] Harkness, A. H.: Non-Gonococcal Urethritis, Baltimore, Williams & Wilkins Company, 1950.

[2] Combes, F. C.; Dietrich, C., and Cohen, J. A.: Keratosis Blennorrhagica: A Brief Review and Report on the Effects of Hyperpyrexia in Its Treatment, J. A. M. A. **114:** 2078 (May 25) 1940.

[3] Willmott, C. B.: "Keratodermie blennorrhagique" (Vidal), Arch. Dermat. & Syph., **13:** 17 (Jan.) 1926. Scholtz, M.: A Syndrome of Blennorrhagic Keratoderma: Report of a Case, ibid. **15:** 165 (Feb.) 1927. Downing, J. G.: Keratoderma Blennorrhagicum: Report of a Case, J. A. M. A. **102:** 829 (March 17) 1934. Sherman, W. L.; Blumenthal, F., and Heidenreich, J.: Blennorrhagic Balanitiform Keratoderma: Report of Three Additional Cases, Including One of Buccal Involvement, Arch. Dermat. & Syph. **39:** 422 (March) 1939. Epstein, E.: Hyperpyrexia in the Treatment of Keratoderma Blennorrhagicum, Am. J. Syph., Gonor. & Ven. Dis. **21:** 148 (March) 1937. Combes.[2] Epstein, E., and Chambers, S. C.: Keratosis Blennorrhagica with Corneal Lesions; Further Observations on Therapeutic Effect of Hyperpyrexia, Arch. Dermat. & Syph. **36:** 1044 (Nov.) 1937. Combes, F. C., and Behrman, H. T.: Use of Vitamin A in Keratosis Blennorrhagica: Successful Treatment with Massive Doses: Report of a Case, ibid. **46:** 728 (Nov.) 1942. Gateley, J. R.: Case of Keratodermia Blennorrhagicum (Gonorrheal Dermatitis), U. S. Nav. M. Bull. **45:** 1159 (Dec.) 1945. Carr, J. L., and Friedman, M.: Keratodermia Blennorrhagicum: Report of a Case with Autopsy, Am. J. Path. **20:** 709 (July) 1944.

Physical examination on admission revealed a middle-aged man who appeared chronically ill and showed signs of weight loss. The right knee and the left fifth finger were warm, tender, and edematous, and motion was limited in these joints. On the toes, soles, and dorsa of the feet, there were many heaped-up hyperkeratotic crusted lesions. When the crust was removed, a denuded area remained. A few similar lesions were present on the fingers (see *A* of the accompanying figure). On the penis, buttocks, groin, and scalp there were discrete and confluent erythematous scaling patches. There was no urethral discharge, and results of digital examination of the prostate gland were within normal limits. Examination of the lumbar portion of the spine revealed about 30% limitation of motion in all directions. The remainder of the physical examination revealed nothing of significance. Temperature, pulse rate, and respirations were normal, and the blood pressure was 110/70.

Laboratory studies revealed a normal urine and negative reactions to the Kahn and gonorrhea complement fixation tests. The red blood cell count was 3,460,000, with 10.5 gm. of hemoglobin per 100 cc.; the white blood cell count was 6,700, with 79% polymorphonuclear leukocytes and 21% lymphocytes. Total blood proteins were 8.2 gm. per 100 cc., of which 5.2 gm. was albumin and 2.8 gm. globulin. Blood urea nitrogen and fasting blood sugar levels were normal. The blood sedimentation rate varied from 60 to 70 mm. per hour (Westergren). Roentgenograms of the chest, hands, and knees revealed nothing of significance. Findings consisted with a diagnosis of moderately advanced rheumatoid spondylitis were present in the lumbar and sacroiliac joints. An electrocardiogram was within normal limits.

The diagnosis of keratosis blennorrhagica was confirmed at a conference at the University of Pennsylvania dermatology clinic. Biopsy of a skin lesion showed changes consistent with the diagnosis of keratosis blennorrhagica. Cultures of skin lesions, prostatic secretions, joint effusion, and the pharynx were negative for pathogenic bacteria and pleuropneumonia-like organisms.

The accompanying table shows the therapeutic agents used. It will be noted that aureomycin, penicillin, streptomycin, terramycin, and typhoid vaccine were of no benefit. Cortisone caused improvement in joint symptoms, but there was no change in the skin lesions.

There was an immediate response to corticotropin therapy on both occasions it was used. A prompt relapse took place when treatment was discontinued the first time; after the second course of corticotropin therapy, which was more prolonged and tapered off more gradually, there was a complete and apparently permanent remission. The patient has gained 25 lb. (11.3 kg.) and has returned to work. When he was last seen, in August, 1951, he had only residual pigmentation on the feet (see *B* of the accompanying figure).

*Therapeutic Regimen Used in Reported Case of Keratosis Blennorrhagica**

Medicament	Dates	Dosage	Results
Penicillin..	10/17/50–10/24/50	600,000 units daily	No response
Aureomycin..	10/24/50–10/27/50	250 mg. q. i. d.	No response
Penicillin plus aureomycin..	10/27/50–11/ 3/50	600,000 units daily	No response
	....	500 mg. q. i. d.	
Cortisone..	11/ 3/50–11/ 8/50	100 mg. q. 8 hr. × 3	Euphoria; arthritis improved; skin lesions unchanged
	....	100 mg. q. 8 hr. × 2	
	....	100 mg. daily	
	11/ 8/50–11/14/50	75 mg. b. i. d.	
Typhoid vaccine..	11/22/50–12/ 7/50	15,000,000 to 250,000,000 units intravenously	No response
Corticotropin..	12/11/50–12/18/50	10 mg. q. 3 hr.	Improvement; prompt relapse after discontinuance of drug
	12/18/50–12/20/50	25 mg. q. 6 hr.	
	12/20/50–12/28/50	25 mg. q. 12 hr.	
	12/28/50– 1/ 2/51	5 mg. q. 3 hr.	
Terramycin..	1/ 4/51– 1/15/51	250 mg. q. 6 hr.	No response
Streptomycin..	1/15/51– 1/24/51	½ gm. b. i. d.	No response
	1/24/51– 1/29/51	½ gm. q. 8 hr.	
	1/29/51– 2/ 1/51	1 gm. b. i. d.	
Corticotropin..	2/ 1/51– 2/12/51	25 mg. q. 6 hr.	Prompt, complete, lasting improvement
	2/12/51– 2/14/51	15 mg. q. 6 hr.	
	2/14/51– 2/20/51	5 mg. q. 6 hr.	
	2/20/51– 2/26/51	5 mg. q. 12 hr.	
	2/26/51– 3/ 5/51	5 mg. daily	

* The patient was discharged on April 4, 1951, with follow-up periods from May 21 to May 24, 1951, and August 13 to August 17, 1951; on both occasions the skin was clear.

SUMMARY

A case of keratosis blennorrhagica in which the patient had an excellent response to corticotropin (ACTH) therapy is reported. It is felt that this may be taken as evidence that the disease is a "reaction pattern." Further experiences with the use of this therapeutic agent are necessary for proper evaluation of its use.

Amebiasis.—Amebic ulceration of the intestinal tract and amebic liver abscess can exist without dysenteric symptoms, or even a history of parasitic infection. I have already commented on the still distressingly general use of the former nomenclature of "amebic dysentery," and the diagnostic error to which it gives rise. . . . I would say that in this country not more than 5% of the patients with amebiasis give a history of dysentery. Even intermittent bouts of diarrhea, which are far more common, are not present in more than 20 to 25% of all cases. Furthermore, . . . amebiasis can exist without any symptoms at all referable to the intestinal tract. Physicians who are not aware of these facts fail to suspect the possibility of amebiasis in four out of every five cases which come under their observation.—Joseph S. D'Antoni, M.D., Concepts and Misconceptions in Amebiasis, *The American Journal of Tropical Medicine and Hygiene,* January, 1952.

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4. Satulsky, E. M.: Keratoderma Blennorrhagicum: Brief Review and Report of a Case Treated with Penicillin, *Am. J. Syph., Gonor. & Ven. Dis.* **29:** 361 (May) 1945. Ladany, E., and Hughes, J. D.: *Etiologic* Considerations of Keratosis Blennorrhagica: Report of a Case in Which Penicillin Was Used, Arch. Dermat. & Syph. **54:** 150 (Aug.) 1946. Miale, J. B., and Singletary, W. V.: Cutaneous Manifestations of Gonococcic Infection: Keratosis Blennorrhagica Treated with Penicillin, ibid. **57:** 151 (Feb.) 1948. Hiehle, W. W., and Hamp, A. K.: Response of Keratosis Blennorrhagica to Penicillin, Mil. Surgeon **105:** 211 (Sept.) 1949. Bethune, C. W.: Keratodermia Blennorrhagica, *with Report of a Case Treated with* Penicillin, Urol. & Cutan. Rev. **51:** 349 (June) 1947. Emmet, R.: Keratosis Blennorrhagica: Its Response to Penicillin, Arch. Dermat. & Syph. **53:** 278 (March) 1946. Thompson, R. G.; White, C. B., and Hailey, H.: Keratosis Blennorrhagica: Response to Streptomycin: Report of a Case, ibid. **59:** 284 (March) 1949.

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BLOOD DYSCRASIA FOLLOWING THE USE OF CHLORAMPHENICOL

Chloramphenicol (chloromycetin®) has been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies. Its antibiotic properties are well known, and when the council accepted this product there was much evidence to demonstrate its therapeutic value. At the same time there then was little reason to believe that serious or fatal side-reactions would be demonstrated. Nevertheless, following a study of the chemical structure of the drug, the Council issued a warning at the time of acceptance even though there was meager evidence to prove that such a warning was necessary. Thus, on page 116 of New and Nonofficial Remedies, 1951, there appears the following statement:

"Changes in the peripheral blood or the blood-forming organs have been reported only during the use of chloramphenicol. Mild hemolytic anemias, granulocytopenia (no cases of agranulocytosis so far) and an arrest in the maturation of the formed elements in the marrow have been described."

Recently there have been additional reports of the effects of chloramphenicol on the blood and bone marrow. At least two types of reaction have been encountered. In one there is a transient depression of the formed elements of the blood, involving red cells, white cells, and platelets during therapy with the drug. This type of reaction has been very uncommon, and in the experience of one group well versed in the field of antibiotic therapy it has seemed to occur in patients who were receiving very large doses of the drug or in patients who had renal insufficiency. The blood of these patients returned to normal, or at least showed pretreatment values, as soon as therapy with the drug was stopped, and no permanent deleterious effect was observed.

A second and more serious type of reaction that has been encountered is production of a true aplastic anemia. In the experience of one group, this anemia has occurred in patients who have previously received one or more courses of chloramphenicol without untoward effect. When the drug was subsequently administered, even in small doses, a severe blood abnormality has appeared. Even deaths have been reported. Whether chloramphenicol continues to remain as one of the more useful antibiotics or whether it will be relegated to a place where its use will be confined to the treatment of patients with typhoid or serious infections for which no other therapy is available, remains to be seen. Further observations are in order. In the meantime, physicians should be on the alert for reactions following therapy with this and any other antibiotic, or in fact any of the newer drugs.

New therapeutic agents, which are being introduced with ever increasing rapidity, are characterized not infrequently by their beneficial or life-saving qualities but also by their ability to cause injury or serious side-effects. A calculated risk is involved whenever one prescribes any medication. The physician is confronted constantly with the difficult task of determining whether the use of a given drug is likely to do more good for a particular patient than any possible harm. In spite of the vast amount of laboratory and clinical study that a new drug usually undergoes before it is placed on the market, subtle or insidious toxic effects, often of a serious nature, frequently are not recognized and brought to the attention of the medical profession in general until after the drug has been on the market for some time and has enjoyed widespread clinical use. A propensity to cause injury to the hematopoietic system is particularly likely not to be generally appreciated until a new drug has undergone extensive use for a considerable period of time. Physicians who observe hitherto unreported toxic effects or injuries attributable to a recently introduced therapeutic agent have the obligation or duty of bringing this information to the attention of the entire profession. If a physician does not have the time or inclination to prepare case reports of drug injuries for publication in a medical journal, he can perform a useful service by advising the office of the Council on Pharmacy and Chemistry of the pertinent facts in such instances. By this means the Council will be provided with necessary information that may serve as the basis for an early authoritative report or warning statement.

INDICATIONS FOR TRACHEOTOMY IN BULBAR POLIOMYELITIS

Until fairly recently the treatment of severe forms of bulbar poliomyelitis was based largely on postural drainage, suction of pharyngeal secretions, parenteral feeding, and the use of oxygen. Whether recovery or death ensued was thought to depend on the degree of pathological involvement of the brain stem and its respiratory centers. More recently, interest among clinicians has shifted to respiratory obstruction, anoxia, and accumulation of carbon dioxide as causes of death, and to the judicious advocacy of tracheotomy as a life-saving measure in properly selected patients afflicted with bulbar poliomyelitis. The essence of the problem has been to select those patients who would probably live without tracheotomy from those who would die without it.[1]

Although in some quarters there has been reluctance to accept tracheotomy as a useful adjunct in the treatment of bulbar poliomyelitis,[2] the preponderance of communications appearing in the world medical literature favor the use of tracheotomy in properly selected patients.[3] Here, considerable thought has been given to the indications for tracheotomy, especially since no single sign or symptom necessarily constitutes an infallible reason for surgical intervention. In general, criteria for tracheotomy cannot be hard and fast. Each case is a law unto itself.

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[1] Mitchell, J. R., and Hill, L. F.: Tracheotomy in Bulbar Poliomyelitis, J. Iowa M. Soc. 40:471 (Oct.) 1950.

[2] Stimson, P. M.: Some Debated Points in the Treatment of Acute Poliomyelitis, J. Pediat. 36:704 (June) 1950.

According to Galloway,[4] indications for tracheotomy in bulbar poliomyelitis include such factors as progressive anoxia with secretion in the upper airway; coma or other signs of anoxia in a patient who does not respond to conventional treatment within a few minutes; pronounced restlessness or stupor occurring in a patient who lies in a respirator; difficulty with secretion in a similarly situated patient; bilateral paralysis or spasm of the vocal cords; appearance of rapidly progressive bulbar symptoms; and the presence of untrained or inefficient attendants, inadequate equipment, and poor cooperation on the part of the patient when there is good reason to doubt that the airway will be kept continuously free of obstructing secretions. By using these indications for tracheotomy during the period between 1947 and 1951, Galloway was able to report a mortality rate of 12.8% in 63 patients with bulbar poliomyelitis as compared to a mortality rate of 38.3% in 722 Illinois patients with the same type of disease.

Priest, Boies, and Goltz performed tracheotomy when there was an occurrence of respiratory distress, as evidenced by recurrent cyanosis, coarse rales in the chest, and laryngeal stridor; excitement and unmanageability on the part of the patient causing him to resist attempts to aspirate his pharyngeal secretions; existence of stupor to a degree sufficient to make the patient oblivious to accumulation of secretion; inability to cough effectively; and pharyngeal pooling of mucus, vocal cord paralysis, or intralaryngeal hypesthesia. In their opinion, the so-called mutilating aspects of the tracheotomy procedure are greatly exaggerated. Of 1,830 patients treated in Minneapolis during the 1946 poliomyelitis epidemic, about 400 had the bulbar form of the disease. Among these, tracheotomy was undertaken in 75 patients, of whom 29 survived. During the 1949 Iowa poliomyelitis epidemic, Mitchell and Hill performed tracheotomy on 10 of 39 patients with bulbar poliomyelitis. Four patients died, two of whom were moribund on admission to the hospital. It was their impression that the six persons who survived did so because of tracheotomy.

From these facts, it is obvious that a primary purpose of tracheotomy is to insure a proper, constant supply of oxygen. Of all body tissues, neural tissue is the least capable of withstanding oxygen want. Galloway points out that 60 seconds of anoxia may produce morphological changes in the brain and that within three to eight minutes it may produce widespread damage, necrosis, and even death. While it is difficult to determine precisely how much anoxia a damaged brain can tolerate, the margin between life and death in patients gravely ill with poliomyelitis is frequently so narrow that a single anoxic episode may kill them. At the same time, it should be emphasized that pharyngeal paralysis by itself is not a proper indication for tracheotomy.[5] There must be inability on the part of the patient to clear his own airway of obstructing secretions. Not all patients with bulbar poliomyelitis in whom the disease process is pursuing an unfavorable course have obstructed airways.

In view of the demonstrated ability of the tracheotomy procedure to reduce mortality in bulbar poliomyelitis, its use in properly selected cases should not be discouraged nor should its value be minimized. Tracheotomy has a limited but important place in the therapy of bulbar poliomyelitis. For the patient who requires the procedure, it is often life-saving. A point of view to be considered seriously by the physician weighing the merits of tracheotomy is that the number of tracheotomies done too late far outweigh those done unnecessarily.[6] At present, there is a need for redoubling efforts to define even more exactly the indications for tracheotomy in bulbar poliomyelitis and for establishing throughout the country strategically located medical centers for the treatment of the disease in all its aspects.

ROENTGEN CHEST SURVEYS IN THE CAMPAIGN AGAINST TUBERCULOSIS

When mass radiography was first introduced as a technique in tuberculous case finding the effectiveness of the miniature film in the detection of pulmonary lesions was questioned in many quarters. A study of various roentgenologic techniques was carried out by a Board of Roentgenology appointed by the administrator of veterans' affairs and was published in THE JOURNAL.[1] A 35 mm. photofluorogram, a 4 by 10 inch stereophotofluorogram, a 14 by 17 inch paper negative, and a 14 by 17 inch celluloid film were taken, within a few minutes of one another, on each of 1,256 persons. The four sets of films were interpreted independently by two radiologists and three chest specialists. A second independent reading of the 14 by 17 inch celluloid films was obtained from each of the five interpreters. Analysis of the results justified the conclusion that except for a slight disadvantage to the miniature techniques resulting from overreading, not one of the method, not even the 14 by 17 inch celluloid is superior, for case finding purposes, to any of the other methods. The board recommended that in mass survey all films be read independently by at least two interpreters. All persons whose films were selected as showing abnormal results or as suggestive of tuberculosis by one or the other of the interpreters should be recalled for further study.

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[3] Priest, R. E., and others: The Present Status of Tracheotomy in Bulbar Poliomyelitis, Ann. Otol., Rhin. & Laryng. **60**:468 (June) 1951. Priest, R. E.; Boies, L. R., and Goltz, N. F.: Tracheotomy in Bulbar Poliomyelitis, ibid. **56**:250 (June) 1947.

[4] Galloway, T. C., and Seifert, M. H.: Bulbar Poliomyelitis: Favorable Results in Its Treatment as a Problem in Respiratory Obstruction, J. A. M. A. **141**:1 (Sept. 3) 1949. Galloway, T. C., and Elsen, J.: Bulbar Poliomyelitis: A Respiratory Problem, Laryngoscope **61**:548 (June) 1951.

[5] Wilson, J. L.: Outline of Essential Treatment of Bulbar Poliomyelitis, J. South Carolina M. A. **44**:354 (Nov.) 1948.

[6] Warder, F.: Emergency Tracheotomy, J. South Carolina M. A. **43**:131 (May) 1947.

[1] Birkelo, C. C., and others: Tuberculosis Case Finding: A Comparison of the Effectiveness of Various Roentgenographic and Photofluorographic Methods, J. A. M. A. **133**:359-366 (Feb. 8) 1947.

In his statistical analysis of the results of the above study, Yerushalmy [2] stressed that in screening examinations the main objective is not to ascertain the total number of the "positives" but to detect the persons possessing certain characteristics as a first step for further examinations and action on these "positive" cases. The inconsistencies in interpretation of the films are not those attributable to any particular method but rather to the subjective errors of interpretation. Unfortunately the number of errors was rather large. Thus, even with the 14 by 17 inch celluloid technique the number of "positives" selected from the 1,256 films was as low as 56 for one reader and as high as 100 for another. The errors of interpretation appear to be of two types: interindividual, or the inconsistency of interpretation found among different readers, and intraindividual, or the failure of the reader to be consistent with himself in independent interpretation of the same set of films.

The resulting false diagnoses in mass radiography surveys constitute a problem of considerable importance. Yerushalmy and his co-workers [3] suggest that one way to diminish the errors in the interpretation of films is to insist on dual reading, by which is meant that a series of films is read and the identification numbers recorded of every film showing evidence of inflammatory disease; later the series is read again by the same or another reader without knowledge of the first reading.

To test the efficacy of dual reading these authors studied 1,807 photofluorograms, which were interpreted independently 10 times. The number of "positives" found by six readers varied from a low of 38 to a high of 83. A single reader missed on the average 32.2% of the films with evidence of inflammatory disease and gave a false positive diagnosis of 1.7%. Films called positive on one or the other of two independent readings contained one-sixth more "truly positives" than were detected by a single reading. A panel reviewing the survey films with contradictory diagnoses succeeded in retaining a large proportion of the "truly positives" and in rejecting a considerable number of "false positives." It is suggested, therefore, that a balanced procedure may be one that refers all films called "positive" by both readers and submits those with contradictory diagnosis to panel review. A single competent reviewer may accomplish results as good as those achieved by a panel of three. Either procedure will detect 30% of "truly positives" that are missed by a single reader, with no increase in the number of "false positives."

Zwerling and his associates [4] attempted to investigate the question of the relative importance of overlooking active cases in mass radiography surveys. The multiple independent interpretations of the mass survey films considered positive were correlated with results of clinical and laboratory investigations. This was a continuation of the previous study by Yerushalmy and his co-workers in which 1,807 photofluorograms were interpreted independently 10 times by six individual readers. There were 10 independent readings on each of 30 "roentgenographically positive" patients. Consequently there were 300 readings available, and if all lesions had been detected on each reading there would have been a total of 300 "positive" readings on these films. Only 205 of the 300 readings were "positive" and in the remaining 95 instances the reader overlooked the lesions. Consequently the over-all percentage of errors on the entire material was 31.7. The same procedure was used to obtain the percentages of errors in the "active" and "inactive" categories. Thus, of the 230 possible "positive" readings for the 23 inactive cases, 161 were recorded positive and 69 as negative, yielding an over-all percentage chance of overlooking such a lesion of 30.0. The percentage chance for error obtained in the same manner for the active lesions was 37.1; it was 42.5 for the "bacteriologically active" cases and 30.0 for the "clinically active." Thus, these authors point out, it is apparent that the chance of overlooking a lesion is much the same whether the lesion is active or not.

Similar conclusions as to the value of reading a photofluorogram were reached by Groth-Petersen and coworkers.[5] A study of two series of 35 mm. microfilms from the Danish Mass Campaign, each including 2,500 persons, revealed that there was agreement by three highly experienced readers in only 10% of the films selected for follow-up. The single reader detected on the average only 68% of the "truly positive" cases and diagnosed 2.5 "false positives" for each true one. In independent dual reading each pair of readers found 84% of the "truly positives"; that is, the second reading resulted in detection of half of the cases missed by a single reader. These authors conclude that an immediate improvement in the reliability in the photofluorographic examination can be obtained by independent dual readings.

Despite the apparent defects, the roentgenologic mass survey is no more fallible than many other diagnostic methods. Improvement is to be looked for, as pointed out by Garland,[6] from greater uniformity in describing lesions and from more rational evaluation of existing classifications.

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[2] Yerushalmy, J.: Statistical Problems in Assessing Methods of Medical Diagnosis, with Special Reference to X-Ray Techniques, Pub. Health Rep. **62**: 1432-1449 (Oct. 3) 1947.

[3] Yerushalmy, J.: Harkness, J. T.; Cope, J. H., and Kennedy, B. R.: The Role of Dual Reading in Mass Radiography, Am. Rev. Tuberc. **61**: 443-464 (April) 1950.

[4] Zwerling, H. B.; Miller, E. R.; Harkness, J. T., and Yerushalmy, J.: The Clinical Importance of Lesions Undetected in a Mass Radiographic Survey of the Chest, Am. Rev. Tuberc. **64**: 249-255 (Sept.) 1951.

[5] Groth-Petersen, E.; Løvgreen, A., and Thillemann, J.: On the Reliability of the Reading of Photofluorograms and the Value of Dual Reading, Acta tuberc. scandinav. **26**: 13-37, 1952.

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THE PRESIDENT'S PAGE

THE CHICAGO MEETING

The 101st Annual Session of the American Medical Association is now a matter of history. The House of Delegates adopted many reports and many resolutions. Among these were two that caused considerable confusion in the minds of some of the delegates, and, I am sure, in the minds of many of the members of the Association.

One of these pertains to Social Security, and the interest and action of the Association in this field has been widely misinterpreted. Recently, a bill was introduced in Congress increasing the old age benefits. No one representing the American Medical Association objected to these provisions, which were involved in the major portion of the bill. Had the bill been confined to these provisions, it would very likely have been law by now.

However, an attempt was made to tie on to the coat-tails of what could be, especially in an election year, a popular bill, a provision that would have given the Federal Security Administrator the entering wedge he has been looking for to control physicians and medical practice. This provision was adopted in committee and rushed into the House under a special rule that permitted no amendment and limited debate to 40 minutes, 20 minutes for each side. It was a deliberate attempt to railroad through a measure that would have had no possible chance of passage had it been subject to open hearings and debate. It was an underhanded political trick. Reactions were such that the bill was defeated.

Subsequently, the American Medical Association and the Republican Congressmen were belabored by the President of the United States. As a matter of fact, it was a nonpartisan vote that defeated the bill, as many Democrats also voted against it. It is my belief that probably the majority of those voting against the bill did so fully as much because of the political chicanery and undemocratic method of introducing the controversial section as because of any feelings they may have had about socialized medicine. These Congressmen deserve commendation for their action. It takes great political courage to vote against a popular bill in an election year because of one section in that bill.

This country needs Congressmen with such courage and foresight. It is no wonder that they receive the support of Americans who believe in the democratic processes of government.

The Ways and Means Committee of Congress then had an opportunity to reintroduce the bill without the controversial section being included. Instead, it saw fit to delete some of the objectionable features but retained a provision that gives the Federal Security Administrator a free hand. Again the Association objected and its House of Delegates expressed this disapproval in the following words when it adopted the resolution:

"WHEREAS, the defeat of H. R. 7800, depriving Social Security beneficiaries of numerous additional benefits, was a direct result of the Truman administration's attempt to play politics by tying in a socialized medicine scheme with an otherwise popular measure; therefore be it

"*Resolved,* That the American Medical Association condemns the breach of faith by this administration with those who would benefit from this bill, in a flagrant attempt to railroad through a provision to aid in the socialization of medicine, which could not possibly be adopted if considered openly and fairly.

"*Be It Further Resolved,* That the American Medical Association urges that Congress re-refer this bill to the committee, where it should be subject to the ordinary democratic processes of legislation."

What the final result will be is not known at this time, but it should be understood clearly that the A. M. A. does not, never has, and will not oppose the general social security provisions of this bill. An attempt to make the Association's attitude appear differently is a deliberate smoke-screen to cover up the duplicity of the bill's sponsors.

The other matter about which there was much confusion was the discussion on the President's Commission on the Health Resources of the Nation. The Board of Trustees had what it felt and still feels is incontrovertible evidence that the motivation behind the appointment of this commission was political. Its belief was made evident, but never did the Board, the Coordinating Committee of the American Medical Association, or Whitaker and Baxter issue one word attacking any member of the commission. Because it felt kindly disposed toward the chairman, the Board offered access to all its information and sent representatives to testify before the commission. The first statement involving personalities came from the chairman of the commission in an unjustified attack on the leadership of the Association and on Whitaker and Baxter. The Board of Trustees accepts full responsibility for the actions of Whitaker and Baxter relating to A. M. A. activities and has strongly approved and implemented their program throughout the entire educational campaign. The House of Delegates approved the actions of the Board and gave it its full confidence. In adopting the Coordinating Committee's Report, unanimously, the House commended Whitaker and Baxter. Any member has the inalienable right to criticize the Association or its Board of Trustees. Differences of opinion result in progress. Criticisms, however, should be constructive and should be based on fact, or on disagreement with policies. The majority rules, however, until such time as the minority can become the majority.

I realize that some members may have disapproved of the employment of Whitaker and Baxter, and they and perhaps others have disapproved of some of the activities of Whitaker and Baxter. That disapproval is their right. The majority of physicians have approved of these actions and so has the House of Delegates. The actions were believed necessary and were never undertaken without consultation with appropriate officers of the A. M. A. Regardless of what anyone may think, had it not been for the work of Whitaker and Baxter and of the medical profession as a whole we should in all probability now be operating under a government-controlled medical care plan.

It has been said that health should not be a matter of politics. With this I fully agree, but the American Medical Association never made it a matter of politics. Any political considerations have been forced on us.

Let us hope that in the ensuing year all health problems can be considered sanely and dispassionately solely on their merits, thus avoiding the injection of personalities into these problems. I can assure everyone that the American Medical Association is interested in doing just this.

Let us all bear in mind that the first aim of the medical profession is service to the public. I believe this can best be administered under a free system. We must devote our efforts to improving the quality and distribution of medical care to the American people. The American Medical Association needs the support and cooperation of all its members. A united profession can accomplish much. A disunited profession will fail.

LOUIS H. BAUER, M.D., HEMPSTEAD, N. Y.

ORGANIZATION SECTION

THE CHICAGO MEETING OF THE AMERICAN MEDICAL ASSOCIATION

Elsewhere in this issue of The Journal (pages 851 to 875) is the first part of the proceedings of the House of Delegates of the American Medical Association at the annual session in Chicago, June 9-13, 1952. In the succeeding issue of The Journal will be the second and perhaps final installment of this report. If necessary, a third issue will be used to complete the proceedings. The actions are abstracted so that the readers may have this information in more easily available form. The official proceedings will be made available, as in the past, in a booklet, which will be sent to all members of the House of Delegates and officers of the American Medical Association. Dr. Louis H. Bauer's inaugural address as President was published in The Journal, June 14, 1952, pages 623-626.

Of course there are many activities other than those of the House of Delegates during this convention. The Board of Trustees, various councils and committees, and other groups were frequently in session while at the same time on many occasions the scientific and technical aspects of the meeting were under way. At such meetings it is almost impossible for visitors, let alone officers and delegates, to attend all meetings. Even when the House is not in session there are meetings of reference committees, the Board, and some of the councils and committees, which leaves little time for these members to attend the many excellent scientific discussions. To offer a complete story of an annual meeting would require several special issues of The Journal; however, there follows here a brief report of some of the activities at the Chicago Convention. Details are impossible because of lack of space, and many of the more interesting events, including papers and exhibits, cannot be given the mention they deserve. During the ensuing several months many of the scientific papers will be published in The Journal. The program was presented in the Convention Number, April 12, 1952.

Almost 12,000 physicians and 13,000 guests registered for the meeting. There were offered more than 400 scientific papers, 300 medical exhibits, and 375 technical exhibits. Some idea of the enormity of this gathering of exhibits can be gained from the amount of space devoted to the technical exhibits—more than two miles. Countless other thousands heard and saw some of the activities because of extensive radio and television coverage. On about 30 occasions officers or other participants in the convention activities appeared before radio or television audiences. On innumerable other occasions mention was made by commentators of A. M. A. actions, scientific papers, or exhibits. For the first time, special one-half hour telecasts originating directly from the A. M. A. session were sent coast to coast over NBC. The shows were entitled "March of Medicine" and were sponsored by Smith, Kline & French Laboratories of Philadelphia. Mobile cameras were set up in the scientific exhibit area at Navy Pier, and demonstrations and reports by exhibitors were offered directly to the public. Thirty-nine stations carried these programs. Thirty million Americans are estimated to have watched each program. For the first time an operation was televised on a nationwide hook-up. The inauguration of Dr. Louis H. Bauer as President was broadcast over more than 200 ABC and Mutual Broadcasting stations throughout the United States and in Hawaii and Alaska, and, as has been customary for several years, Smith, Kline & French Laboratories sponsored the televising of surgical demonstrations over circuits not available to ordinary television sets. The telecasts originated from the operating rooms of Wesley Memorial Hospital. Also included in this television program were clinical demonstrations in other fields. The popularity of this program was evident in the size and interest of the audience for each showing.

Included in the preconvention meetings was a basic course in electrocardiography, which was arranged by the American Medical Association and aided financially by the Beck-Lee Corporation. Almost three hundred physicians registered for the course, which was offered to them without charge. Another meeting of much interest was the annual conference of presidents and other officers of State Medical Associations, which had an audience of possibly 400. Among the speakers were Honorable Walter H. Judd, M.D., Congressman from Minnesota, and Dean Clarence Manion, J.D., of Notre Dame Law School. J. Stanley Kenney of New York became president and Ross D. Wright, Tacoma, Wash., president-elect. During the week preceding the A. M. A. meeting, Chicago was host to 13 other medical meetings.

The 101st annual session of the American Medical Association was called by some visitors "The World Fair of Medicine." This recognition of the annual meeting came not only from the many thousands of physicians attending from the United States but from the visitors from more than 40 countries, representing six continents. Covering the meeting were 100 science writers and reporters and the number of words released by these men and women through their press outlets almost reached astronomical figures.

There were moments for relaxation for physicians and their guests. Teas, luncheons, and dinners were much in evidence, particularly those organized by fraternities. Golf was not forgotten, and Dr. Charles Donatelli of Toledo won the 1952 championship of the American Medical Golfing Association.

Officers Elected.—The House of Delegates elected Dr. Edward J. McCormick of Toledo, Ohio, President-Elect of the American Medical Association. He will take office at the annual session in New York City next June. As members of the Board of Trustees, Dr. James F. McVay of Kansas City, Mo., was elected to occupy the place vacated by Dr. McCormick, whose term had expired, and Dr. Dwight Murray, Napa, Calif., was reelected and subsequently was reelected by the Board of Trustees to be its Chairman. Named as A. M. A. Vice President was Dr. Leo F. Schiff, Plattsburg, N. Y.; as Speaker of the House of Delegates, Dr. James R. Reuling, Bayside, N. Y., and as Vice Speaker Dr. E. Vincent Askey, Los Angeles. For several years Dr. Reuling has served as Vice Speaker of the House. This year, because of illness, he was not present at the meeting, and Dr. Askey was elected as Vice Speaker pro-tem. Reelected to office were Dr. J. J. Moore, Chicago, Treasurer, Dr. George F. Lull, Chicago, Secretary.

Dr. H. G. Weiskotten, Skaneateles, N. Y., was elected to succeed himself as a member of the Council on Medical Education and Hospitals. The membership of this Council was enlarged by three, and the persons chosen to complete the membership, including the vacancy caused by the death of Dr. Russell L. Haden, were Dr. John W. Cline, San Francisco; Dr. James M. Faulkner, Boston; Dr. Charles E. Stone, Galveston; and Dr. Leland S. McKittrick, Boston.

Dr. Elmer Hess, Erie, Pa., was elected to succeed himself as a member of the Council on Medical Service; Dr. Carlton E. Wertz, Buffalo, succeeds Dr. Thomas A. McGoldrick of Brooklyn, whose term of office had expired, and Dr. James Graves, Monroe, La., was elected as a new member.

Other appointments include Dr. H. L. Pearson, Jr., Miami, Fla., to succeed himself as a member of the Judicial Council, Dr. S. P. Reimann, Philadelphia, to succeed himself as a member of the Council on Scientific Assembly, and Dr. James Stevenson, Tulsa, Okla., to succeed himself as a member of the Council on Constitution and By-Laws.

American Medical Education Foundation.—When the House of Delegates received a report on the American Medical Education Foundation, announcements soon were forthcoming of additional contributions. The American College of Radiology contributed $2,000, the Chicago Medical Society $25,000, Dr. M. Pfeiffenberger, Alton, Ill., $1,000, and the Woman's Auxiliary of the American Medical Association, $10,000. In addition, Dr. and Mrs. Harold F. Wahlquist, Minneapolis, made a contribution in celebration of their wedding anniversary. Mrs. Wahlquist is immediate Past President of the Woman's Auxiliary. It was also announced that the Council of the Illinois State Medical Society voted recently to increase the annual dues of its members by $20.00, this additional levy to be used for the American Medical Education Foundation.

Woman's Auxiliary.—Mrs. Harold F. Wahlquist, who was President of the Woman's Auxiliary to the American Medical Association for 1951-1952, was succeeded by Mrs. Ralph Eusden, Long Beach, Calif. The President-Elect is Mrs. Leo J. Schaefer, Salina, Kan. Active as always, the Auxiliary considered among other things reports on legislation and public relations. Mrs. Eusden in her inaugural address referred to the public relations job that physicians' wives may undertake for their doctor husbands. Of added interest to the medical profession and, of course, to the House of Delegates was the contribution of $10,000 to the American Medical Education Foundation.

GENERAL SCIENTIFIC MEETINGS

The scientific program presented a wealth of postgraduate medical educational material. At the general scientific meetings 12 speakers, each outstanding in his field, reviewed current knowledge and recent advances in various branches of surgery, medicine, and public health. Topics covered included benign lesions of the breast, carcinoma of the stomach, peptic ulcer, blood dyscrasias, intermediary metabolism and surgery of the gallbladder, pancreas, and heart. In the discussion on the treatment of chronic relapsing pancreatitis, Dr. R. B. Catell of Boston reported that pancreatoduodenectomy or distal pancreatectomy have given the best results at the Lahey Clinic. For acute pancreatitis Dr. Catell recommended symptomatic treatment, including epidural anesthesia. Dr. Alton Ochsner of New Orleans deplored the extremely low five year survival rate of carcinoma of the stomach (5 to 10% even in the best teaching institutions) and urged earlier surgical intervention. After pointing out that a lesion large enough to be diagnosed roentgenographically may already have metastasized, Dr. Ochsner suggested that exploratory laparotomy be performed, in the absence of x-ray or laboratory abnormalities, on any man over 40, previously well, who shows anorexia severe enough to cause 5 to 15 lb. weight loss. Exploration in such patients has revealed early carcinomatous lesions less than 0.5 cm. in diameter. In a later session Dr. L. T. Coggeshall of Chicago discussed the economic and military importance to this country of tropical diseases, and outlined the factors that predispose to their spread even in temperate climates. He emphasized that it is necessary for the practitioner in temperate climates to be familiar with these diseases and to recognize them in his patients.

SECTION MEETINGS

At the separate meetings of the 21 sections of the scientific assembly papers relating to special branches of medicine were read. Some were primarily of interest to specialists, others to general practitioners. Of the many excellent papers presented only a representative few can be mentioned in the space available. Those who did not attend the meetings will find a complete list of titles in the April 12 issue of THE JOURNAL.

In the Section on Anesthesiology papers of special interest were those on the use of synthetic muscle relaxants in anesthesiology, the diagnostic and therapeutic use of nerve block in intractable pain, and the technique of applicability of continuous paravertebral procaine blockade in post-traumatic syndromes and peripheral vascular diseases. Dr. J. A. Paulson of Rochester, Minn., reported that the administration of small amounts of ether along with thiopental (pentothal®) -nitrous oxide-oxygen anesthesia made this method of anesthesia safer, since ether decreases the tendency to laryngeal spasm, stimulates respiration in small doses, and potentiates the analgesic effect of thiopental.

In the Section of Dermatology and Syphilology, Drs. F. A. Ellis and W. R. Bundick of Baltimore reported that the majority of dermatologists have stopped using antihistaminics topically because of their ineffectiveness and their tendency in some cases to produce irritation or allergic contact dermatitis. According to Dr. L. M. Lawrence of Santa Barbara, Calif., 0.1% podophyllin in zinc oxide ointment is a potent antipruritic agent and causes partial involution of the lesions of lichen simplex chronicus, pruritic psoriasis, and nuchal eczema. Dr. T. Cornbleet of Chicago found the local injection of hyaluronidase a useful procedure in the treatment of keloids. Drs. A. C. Curtis and E. R. Harrell of Ann Arbor, Mich., reported that in one-third of their cases of dermatomyositis there was an associated cancer.

In the Section on Diseases of the Chest, Drs. M. E. Flipse and G. A. Hedberg of Minnesota recommended the use of rapidly disappearing water-soluble contrast media for bronchography; Dr. R. H. Smart of Los Angeles and co-workers demonstrated the effectiveness of intermittent positive-pressure breathing in improving the airway of patients with emphysema, bronchiectasis, pulmonary fibrosis, and bronchial asthma; and Dr. A. L. Barach and associates described the use of mechanically induced sudden changes in intrapulmonary and extrathoracic pressures to promote elimination of bronchial secretions and prevent atelectasis in poliomyelitis, bronchial asthma, and bronchiectasis. Dr. C. W. Tempel of Denver reported that the combination of viomycin, *p*-aminosalicylic acid, and streptomycin is valuable in the treatment of tuberculosis and that combinations of streptomycin and the hydrazides of isonicotinic acid are more effective in producing conversion of sputum and reduction in lesions than either drug alone. Dr. C. P. Bailey and associates of Philadelphia described a surgical technique for the correction of aortic stenosis. This involves the threading of a mechanical dilator on a piano wire previously passed through the aortic orifice via a tiny puncture in the left ventricular wall.

A symposium on chemotherapeutic and antibiotic agents was an important feature of the Section on Experimental Medicine and Therapeutics. Dr. H. E. Alexander of New York pointed out that while the mortality rates for the pyogenic meningitides have been greatly reduced by antibacterial therapy, the number of survivors who show significant cerebral damage has increased. In a discussion of the national blood procurement program, Dr. C. V. Moore of St. Louis drew attention to the dangers of excessive use of blood transfusions, and the necessity for replacement of iron losses in frequent blood donors. A paper by Dr. C. C. Sprague of St. Louis and associates reported beneficial effects from platelet transfusions in thrombocytopenia due to deficient production but not to peripheral destruction of platelets.

In the Section on Gastro-Enterology and Proctology, Drs. P. L. Shallenberger and Peter Fisher of Sayre, Pa., reported the finding of neoplasms in 10% of 3,500 patients subjected to routine sigmoidoscopy. They conclude that this procedure should be done routinely in patients over 40 years of age. Dr. L. M. Morrison of Los Angeles has found orally administered salicylazosulfapyridine of value in the treatment of ulcerative colitis.

In the Section of General Practice emphasis was placed on atherosclerosis, osteoarthritis, hemiplegia, paraplegia, poliomyelitis, duodenal ulcer, the use of corticotropin (ACTH) and cortisone, and electrocardiographic diagnosis.

A symposium on diabetes and discussions of the present status of corticotropin and cortisone therapy, the antibacterial therapy of tuberculosis, and the treatment of cardiac arrythmias were presented before the Section on Internal Medicine, along with a variety of other subjects. Dr. H. L. Jaffe and co-workers of Los Angeles reported that the radioactive iodine treatment of 100 patients with severe angina pectoris or congestive failure yielded good results in 53% and fair results in 20%. Drs. E. E. Osgood and A. J. Seaman of Portland, Ore., stated that they had been able to prolong life in patients with chronic leukemia by means of fractionated total body irradiation with x-rays or radioactive phosphorus.

In a round table discussion before the Section on Laryngology, Otology and Rhinology it was reemphasized that poliomyelitis following nose and throat operations is more likely to be bulbar in type.

In the newly created Section on Military Medicine there were discussions on vascular surgery by Dr. H. B. Shumacker Jr. of Indianapolis and problems of medical personnel procurement by Dr. Melvin Casberg of Washington, D. C., and a panel of civilian and military experts. Dr. R. H. Holmes of Washington, D. C., stated that in Korea medical care of the wounded has reached almost the ultimate in efficiency and that further reduction in mortality in warfare will depend on the development of body armor and means of faster battlefield salvage. The compressed fiberglass and nylon thoracoabdominal vests now being tested in Korea have been of significant protective value. According to Dr. A. J. Glass of San Francisco, battle indoctrination and combat rotation of troops in Korea have reduced the number of psychiatric breakdowns among soldiers in battle. In addition the use of psychiatric facilities at the divisional and army levels has permitted rehabilitation of the great majority of psychiatric casualties for both combat and noncombat duties in Korea.

In the Section on Miscellaneous Topics a panel discussion on corticotropin (ACTH) and cortisone in allergic diseases brought out a number of important facts and opinions. Dr. G. A. Koelsche stated that these hormones are indicated in the practice of allergy only in hospitalized patients with status asthmaticus refractory to other forms of treatment, or in asthmatic patients who must be prepared for operation. It was the consensus of most of the panel members that there is no contraindication to the long-term use of cortisone and ACTH provided a close watch is kept for concurrent infections, hypertension, electrolyte disturbances, and other untoward reactions. Dr. B. Rose of Montreal reported three cases of osteoporosis with spontaneous fractures in patients under long-term therapy. This tendency was counteracted by the administration of calcium, testosterone, and a high protein diet. Dr. A. H. Holland of Chicago reported that of 4,376 patients receiving ACTH 1.9% had immediate allergic reactions to the drug, while 7.5% acquired resistance to ordinary doses. Some of the resistant patients again responded when thyroid extract was administered or when the dose was increased. Others responded only when ACTH from another species was used. With highly purified ACTH no drug resistance was noted. Dr. Rose noted no harm to mother or fetus from the administration of ACTH during the last four months of pregnancy. Dr. M. M. Peshkin of New York believes that these hormones should not be used in children less than 6 years of age.

Whether gamma globulin actually affords significant protection against poliomyelitis was discussed by Dr. H. W. Kumm of New York in the Section on Nervous and Mental Diseases. He stated that this question cannot be answered until experiments now in progress are completed at the end of this summer. He was optimistic about the ultimate feasibility of active immunization with attenuated strains of the virus. Drs. C. H. Millikan, J. S. Lundy, and L. A. Smith of Rochester, Minn., were unable to confirm reports of beneficial effects of procaine block of the stellate ganglion in acute cerebral infarction. Dr. A. J. Ward of Seattle found that many of the electroencephalographic and clinical changes following concussion can be modified by anticholinergic drugs and noted that repeated electroshock convulsions produced electroencephalographic changes similar to those of the postconcussion state. Dr. J. J. Madden and associates of Chicago described various psychiatric disorders not based on irreparable dementia that may appear in middle or later life in person previously well integrated. They believe that the prognosis in these cases is better than if the disorder had appeared earlier in life. Drs. J. W. Williams and H. Stevens have found that following the cure with antibiotics of pyogenic meningitis there sometimes remains an inelastic fibrous membrane over the surface of the brain that may prevent further growth of the brain in children and account for progressive retardation of intellectual development or even convulsive seizures. Surgical removal of the membrane has accelerated development in some cases.

Dr. J. E. Eckenhoff and co-workers of Philadelphia reported in the Section on Obstetrics and Gynecology that N-allyl normorphine, a synthetic drug, antagonizes the respiratory and circulatory depression of the newborn infant produced by maternal sedation with morphine, meperidine, and other opiates, but is ineffective in abolishing the depressant effects of other drugs. Dr. C. S. Stevens and associates of Detroit observed reductions in the levels of fibrinogen, prothrombin, and ac-globulin in patients with abruptio placenta and suggested replacement of these elements by transfusion of fresh whole blood before surgical emptying of the uterus is attempted.

In the combined meeting of the Section on Ophthalmology and the Association for Research in Ophthalmology, Dr. Ludwig von Sollmann and co-workers of New York reported that in experiments in cats both noradrenalin and epinephrine (adrenalin®) produced intraocular pressure changes paralleling completely the blood pressure changes. Dr. John W. Patterson of Cleveland suggested that high blood levels of xylose, galactose, or glucose cause cataracts. In a clinical report on retrolental fibroplasia, Dr. Loren P. Guy reported that neither ACTH nor oxygen influenced the disease.

Dr. L. S. Sell of Idaho Falls, Idaho, made a plea before the Section on Orthopedic Surgery for earlier diagnosis and treatment of intervertebral disc lesions, with full trial of conservative management before surgical intervention is employed. Dr. R. C. Robertson of Chattanooga, Tenn., and Dr. J. E. M. Thomson and associates of Lincoln, Neb., recommended intramedullary fixation of fractures of the forearm. Dr. P. Blanco of Buffalo, N. Y., stated that the best results from synovectomy of the knee are to be expected in chronic primary synovitis with effusion without osteochondral involvement, and in irreparable chronic synovitis secondary to osteochondral pathological structures that can be successfully removed.

In the Section on Pathology and Physiology Dr. H. J. Corper of Denver warned against over-optimism concerning the chemotherapy of tuberculosis, since the bacillus has successfully resisted all agents used to date. Dr. A. S. Johnson and associates of Detroit described experiments in which cortisone reduced the area of fibrosis and the mortality rate in myocardial infarction in dogs. Dr. E. M. Humphreys of Chicago concluded that alterations in the thymus in myasthenia gravis were secondary rather than primary to the disease, and Dr. J. A. Rider reported his inability to demonstrate an inhibitory substance in the thymus of myasthenics.

The first meeting of the Section on Pediatrics was devoted to a symposium on cortisone, corticotropin, and allied substances in pediatric practice. At a subsequent session Dr. T. S. Szewczyk of East St. Louis, Ill., reported that he was able to produce fundus changes resembling those seen in retrolental fibroplasia by suddenly lowering the oxygen concentration in the environment of premature infants and that he could prevent these changes by proper oxygen administration. Dr. H. M. Slater of Montreal urged pediatricians to become acquainted with the use of the laryngoscope and endotracheal tubes and resuscitation appliances to increase the salvage rate of asphyxiated infants.

Dr. H. A. Rusk, chairman of the Section on Physical Medicine and Rehabilitation, pointed out the economic dividends of rehabilitation, following which there were discussions of rehabilitation of the hemiplegic, paraplegic, and poliomyelitis patient. A symposium on cerebral palsy also attracted much attention. Dr. O. L. Huddleston of Santa Monica, Calif., pointed out the value of electromyography in the diagnosis of abnormalities of the neuromuscular system and in the presentation of scientific evidence to civilian courts or veteran and military adjudication boards.

Members of the Section on Preventive and Industrial Medicine and Public Health heard papers on preventive medicine in atomic energy plants, occupational diseases of the chest and skin, industrial medicine in other countries, public health aspects of arthritis, bronchopulmonary diseases, and speech and hearing defects. Dr. C. P. McCord of Ann Arbor, Mich., stressed the need for more instruction in industrial medicine in medical schools and among practitioners.

Among the many interesting papers presented before the Section on Radiology were those dealing with roentgen examination of the gallbladder, the reduction of intussusception by barium enema, and the use of grids in the roentgen therapy of advanced carcinoma. In addition Dr. H. L. Friedell and associates reported that cardiac and peripheral blood flow could be measured satisfactorily by determining the distribution of intravascularly injected serum albumin labelled with radioactive iodine. Dr. L. Reynolds and associates reported remarkable success in discovering by means of radioactive tracer techniques concealed toxic adenomas of the thyroid or extensions of thyroid tissue into areas where they cannot be palpated or demonstrated radiographically. A high powered scanning x-ray tube that can be used to amplify and intensify the fluoroscopic image of such regions as the abdomen was described by Dr. R. J. Moon of Chicago.

The surgical therapy of intraoral tumors, diverticula of the esophagus, hiatus hernia, portal hypertension, lymphedema, shoulder girdle syndromes, lesions of the adrenal glands, duodenal ulcer, and gastric carcinoma was discussed in the Section on Surgery, and a tribute to William Stewart Halsted was given by Dr. Alfred Blalock of Baltimore. Drs. W. A. Cooper and G. N.

Papanicolaou of New York report that the use of an abrasive gastric balloon for the cytologic diagnosis of gastric cancer is practical and more accurate than any other method available.

Several papers on the prevention and treatment of kidney stones were presented before the Section on Urology. Among them was one by A. J. Butt of Pensacola, Fla., and associates who reported that subcutaneous injection of hyaluronidase prevented the formation of new stones or enlargement of old ones in a number of patients with multiple recurring calculi. Some stones appeared to be reduced in size by this treatment. Dr. J. K. Lattimer stated that isonicotinyl hydrazide has given impressive preliminary symptomatic results in the therapy of renal tuberculosis. The use of retroperitoneal injections of oxygen for the roentgenographic delineation of the kidneys and adrenals was discussed by Drs. J. Duff, T. A. Morrissey, and Dr. J. S. Ritter.

SCIENTIFIC EXHIBITS

Extremely popular with those attending the annual session were the question and answer conferences and exhibits on cardiovascular diseases, overweight, and diabetes. In each of these symposiums, presented in cooperation with such outstanding organizations as the American Heart Association, the American Dietetic Association, Metropolitan Life Insurance Company, U. S. P. H. S., Harvard School of Public Health, and the American Diabetes Association, a panel of experts discussed practical problems in the diagnosis and treatment of these disorders.

Equally popular were the practical demonstrations on artificial respiration, treatment of fractures, and fresh pathological specimens, all sponsored by the A. M. A. Committee on Scientific Exhibits. Perhaps most spectacular were the daily demonstrations of methods of rescue of the "drowning" from the waters of Lake Michigan off the end of Navy Pier. Rowboat, canoe, buoy and ring torpedo, surfboard, and swimming rescues were employed, and the newly approved back pressure-arm lift method of artificial respiration was demonstrated.

The 300 exhibits of the scientific sections, in which 1,200 physicians participated, and which portrayed graphically new developments in every branch of medicine or summarized knowledge on everyday problems, drew large crowds daily. These exhibits, representing a tremendous amount of time, effort, and scientific and artistic talent, offered unexcelled opportunities for visitors to obtain a leisurely and "painless" refresher course in general medicine. The Committee on Awards of the Council on Scientific Assembly selected a number of exhibits for special honors. These are described elsewhere in this issue of THE JOURNAL.

Participating in the scientific exhibits were some physicians who were affiliated with the research and clinical departments of drug manufacturers. One such display presented a summary of information gathered from 40 researchers in clinical practice who were doing research with ACTH. This summary gave facts for the inquiring physician and reflected the growing tendency for industry to be more helpful to physicians, a tendency worthy of commendation. Industry has a responsibility not only to make worth-while drugs available but to share its knowledge without bias, so that the medical profession may always feel that the information it obtains from any quarter is reliable.

Television and Motion Pictures.—The color telecasts of surgical operations and clinical demonstrations directly from Wesley Memorial Hospital to the Navy Pier were attended by the usual capacity crowds. A total of 31 demonstrations were presented, including inguinal herniorrhaphy, cesarean hysterectomy, the use of radioiodine in the diagnosis and treatment of thyroid disease, examination of the breasts, treatment of strabismus, and a dermatology clinic. The official medical motion picture program also played to full houses. Twenty-two films, many with sound and some with color, covered such subjects as foreign bodies in the air and food passages, congenital malformations of the heart, glaucoma, gastric resection, pyloromyotomy for infantile pyloric stenosis, and skin cancer. A number of commercially sponsored medical motion pictures on a variety of subjects were also shown daily in other parts of Navy Pier.

SPECIAL AWARDS

Presented during the session were a number of awards for outstanding contributions to medicine. Dr. Paul Dudley White of Boston received the 1952 Distinguished Service Award of the American Medical Association for his work in cardiology. (THE JOURNAL, June 21, page 765) Dr. Herbert McLean Evans of Berkeley, Calif., was recipient of the $5,000 Passano Foundation Award for his many contributions in the fields of nutrition and endocrinology. Mr. Howard W. Blakeslee, Associated Press science editor, was awarded, posthumously, a gold medal and citation by the American Medical Association for advancing the ideals of American medicine and contributing notably to the public welfare (THE JOURNAL, June 21, page 766).

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the Chicago Session elicited numerous laudatory comments. The high quality of medical art, together with the general excellence of the exhibits, exceeded all previous meetings. The distance over which the Scientific Exhibit extended was in part compensated for by the arrangement of section groups one after the other in continuous succession.

The Special Exhibit on Fractures was as popular as ever. Responsibility for the arrangements initiated by Frederick A. Jostes, M.D., was assumed by Gordon M. Morrison, M.D., Boston, and Ralph G. Carothers, M.D., Cincinnati, after the untimely death of Dr. Jostes. The exhibit consisted of six booths with demonstrations stressing the elementary points in the treatment of fractures. More than 40 surgeons assisted in the demonstrations.

The Special Exhibit on Fresh Pathology was presented with the cooperation of the Illinois Society of Pathologists by a large committee, of which George Milles, M.D., Chicago was chairman. The specimens, which were numerous and interesting, were obtained from the various hospitals and medical schools in the Chicago area. Some 20 pathologists assisted with the demonstrations.

The Special Exhibit on Artificial Respiration was spectacular and timely. It was presented with the cooperation of the American National Red Cross and the Council on Physical Medicine and Rehabilitation of the American Medical Association. Demonstrations were given both in the exhibit booth and in the waters of Lake Michigan. The chairman of the committee in charge was Archer S. Gordon, M.D., Chicago.

The Exhibit Symposium on Cardiovascular Disease, with 17 exhibits, was exceedingly popular. The Committee on Awards extended to the group a special commendation, but the general excellence of the exhibits was such that they might have received individual awards had they been shown in the various Sections from which they were drawn. The question and answer conference on cardiovascular disease, held in a room adjoining the exhibits, was crowded to capacity during the entire week. The program was arranged with the cooperation of the American, Illinois, and Chicago Heart Associations. Louis N. Katz, M.D., Chicago, was general chairman, with Richard Langendorf, M.D., Chicago, subchairman, in charge of the question and answer conference.

The Exhibit Symposium on Overweight, Nutrition and Health was presented for the third time, with six exhibits, through the cooperation of the American Dietetic Association, the Metropolitan Life Insurance Company, the United States Public Health Service and the Harvard School of Public Health. The group was awarded a special commendation by the Committee on Awards. The question and answer conference on the same subject was even more popular than previously, the room always being crowded. James R. Wilson, M.D., Chicago, was the chairman.

The exhibit Symposium on Diabetes, with six exhibits, was presented with the cooperation of the American Diabetes Association and the George F. Baker Clinic, New England Deaconess Hospital, Boston. The group was given a special commendation by the Committee on Awards. The Question and Answer Conference on Diabetes, in an area adjoining the exhibits, was conducted continuously from Monday morning to Friday noon. Howard F. Root, M.D., Boston, was chairman of the group.

The Section on Anesthesiology had 12 exhibits, of which 3 received awards consisting of the Billings bronze medal, a certificate of merit and an honorable mention. Scott M. Smith, M.D., Salt Lake City, was the Section representative.

The Section on Dermatology and Syphilology presented a group of 16 exhibits, one of which received the Hektoen silver medal, one a certificate of merit, one an honorable mention, and one a certificate of appreciation. The Section representative was James R. Webster, M.D., Chicago.

The Section on Diseases of the Chest had 15 exhibits. There were six awards, consisting of the Hektoen bronze medal, four certificates of merit and an honorable mention. The Section representative was Edwin R. Levine, Chicago.

The Section on Experimental Medicine and Therapeutics presented a group of 16 exhibits, with 4 awards. These consisted of the Billings gold medal, a certificate of merit, an honorable mention, and a certificate of appreciation. Robert W. Wilkins, M.D., Boston, was the Section representative.

The Section on Gastro-Enterology and Proctology had nine exhibits. There were three awards, consisting of a certificate of merit and two honorable mentions. The Section representatives were Everett D. Kiefer, M.D., Boston, and J. P. Nesselrod, M.D., Evanston, Ill.

The Section on General Practice had 13 exhibits. There were five awards consisting of a certificate of merit, three honorable mentions, and a certificate of appreciation. Charles E. McArthur, M.D., Olympia, Wash., was the Section representative.

The Section on Internal Medicine had 13 exhibits, four of which received awards consisting of a certificate of merit and three honorable mentions. In addition to the above, there were seven exhibits from this Section in the Exhibit Symposium on Cardiovascular Disease. Wesley W. Spink, M.D., Minneapolis, was the Section representative.

The Section on Laryngology, Otology and Rhinology had 14 exhibits, one of which received a certificate of merit and one an honorable mention. The Section representative was Francis W. Davison, M.D., Danville, Pa.

The Section on Military Medicine had 10 exhibits, one of which was given an honorable mention and one a certificate of appreciation. Col. Wm. S. Stone, Washington, D. C., was the Section representative.

The Section on Nervous and Mental Diseases presented a group of 15 exhibits. There were four awards, consisting of a certificate of merit and three honorable mentions. The Section representative was Leon J. Whitsell, M.D., San Francisco.

The Section on Obstetrics and Gynecology had a group of 15 exhibits, of which one was given a certificate of merit and two honorable mention. Frederick H. Falls, M.D., Chicago, was the Section representative.

The Section on Ophthalmology had eight exhibits, of which one received a certificate of merit and two honorable mention. The Section Exhibit Committee consisted of Georgiana D. Theobald, M.D., Oak Park, Ill., Chairman, Donald J. Lyle, M.D., Cincinnati, Ohio, and Phillips Thygeson, M.D., San Jose, Calif.

The Section on Orthopedic Surgery had eight exhibits, of which one received a certificate of merit and one an honorable mention. J. Vernon Luck, M.D., Los Angeles, was the Section representative.

The Section on Pathology and Physiology had 13 exhibits. There were three awards, consisting of two certificates of merit and an honorable mention. Frank B. Queen, M.D., Portland, Ore., was the Section representative.

The Section on Pediatrics presented a group of 17 exhibits. There were three awards: certificate of merit, honorable mention, and certificate of appreciation. F. Thomas Mitchell, M.D., Memphis, Tenn., was the Section representative.

The Section on Physical Medicine and Rehabilitation had nine exhibits, of which two received honorable mention. The Section representative was Arthur L. Watkins, M.D., Boston.

The Section on Preventive and Industrial Medicine and Public Health had 11 exhibits. There were four awards, consisting of the Billings silver medal, a certificate of merit, an honorable mention, and a certificate of appreciation. Paul A. Davis, M.D., Akron, Ohio, was the Section representative.

The Section on Radiology had nine exhibits, of which one received a certificate of merit and one an honorable mention. Richard H. Chamberlain, M.D., Philadelphia, was the Section representative.

The Section on Surgery, General and Abdominal, presented a group of 20 exhibits. There were six awards, consisting of the Hektoen gold medal, three certificates of merit, and two honorable mention. Walter G. Maddock, M.D., Chicago, was the Section representative.

The Section on Urology had eight exhibits, of which one received a certificate of merit and one an honorable mention. A feature of this group was the discussion of exhibits each day on a regular schedule. The Section Exhibit Committee consisted of Roger W. Barnes, M.D., Los Angeles, Chairman, Rubin H. Flocks, M.D., Iowa City, and George H. Ewell, M.D., Madison, Wis.

The miscellaneous group contained 12 exhibits, of which one received an honorable mention.

The total number of booths in the Scientific Exhibit was 300, of which 252 were presented by the Sections and 48 were special and miscellaneous.

There were 22 motion pictures shown in the motion picture theater, each film being shown once each day on a regular schedule.

The report of the Committee on Awards follows:

REPORT OF COMMITTEE ON AWARDS

MEDAL AWARDS

Hektoen Medal.—The Hektoen Medal is presented for exhibits of original investigation which are judged on the basis of originality and excellence of presentation. Three awards are made consisting of gold, silver, and bronze medals.

The Gold Medal to John L. Madden, John M. Lore Jr., and Frank P. Gerold, St. Clare's Hospital, New York, for the exhibit on surgical anatomy of the portal system.

The Silver Medal to John R. Haserick, A. C. Corcoran, Harriet Dustan, and Lena A. Lewis, Cleveland Clinic, Cleveland, for the exhibit on systemic lupus erythematosus.

The Bronze Medal to Charles P. Bailey, Raymond C. Truez, Armand W. Angulo, Hector P. Redondo Ramirez, and Nicholas Antonius, Hahnemann Medical College and Hospital, Philadelphia, and St. Michael's Hospital, Newark, N. J., for the exhibit on arteriolization of the coronary sinus.

Billings Medal.—The Billings Medal is presented for exhibits which do not exemplify purely experimental studies but are judged on the basis of excellence of correlating facts and excellence of presentation. Three awards are made, consisting of gold, silver, and bronze medals.

The Gold Medal to Grace M. Roth, James T. Priestley, W. F. Kvale, N. C. Hightower, Malcolm B. Dockerty, and E. V. Flock, Mayo Clinic, Rochester, Minn., for the exhibit on pheochromocytoma, a cause of hypertension—diagnosis and surgical treatment.

The Silver Medal to Ernest Carroll Faust, Tulane University of Louisiana, the School of Medicine, New Orleans, for the exhibit on malaria.

The Bronze Medal to Henry S. Ruth, Mary L. Buckley, and Kenneth K. Keown, Hahnemann Medical College and Hospital, Philadelphia, for the exhibit on cardiac asystole.

SECTION AWARDS

Certificates of Merit and Honorable Mention are awarded to the following exhibits in each Section.

Section on Anesthesiology.—Certificate of Merit to John Adriani and John Parmley, Louisiana State University Medical

School and Charity Hospital, New Orleans, for the exhibit on accidents and complications of local anesthesia.

Honorable Mention to Robert Tennant and Charles M. Barbour, Hartford Hospital, Hartford, Conn., for the exhibit on blood volume determinations as a guide to intravenous therapy experiences of a general hospital.

Section on Dermatology and Syphilology.—Certificate of Merit to G. Douglas Baldridge, Louis H. Winer, and Alvin J. Leeb, School of Medicine, University of California at Los Angeles, and Wadsworth General Hospital, Los Angeles, for the exhibit on cytologic diagnosis of diseases of the skin.

Honorable Mention to Boynton H. Booth and Roland W. Jones, Indianapolis General Hospital, Indianapolis, for the exhibit on grain itch.

Section on Diseases of the Chest.—Certificate of Merit to Edward H. Robitzek and Irving J. Selikoff, with the assistance of Erich Mamlok and James A. Rogers, Sea View Hospital, Staten Island, N. Y., for the exhibit on treatment of tuberculosis with hydrazine derivatives of isonicotinic acid.

Certificate of Merit to Gordon M. Meade, E. Osborne Coates, and William Steenken Jr., Trudeau Sanatorium and Foundation, Trudeau, N. Y., for the exhibit on the antituberculosis activity of two hydrazines of isonicotinic acid.

Certificate of Merit to John C. Burke, Richard Donovick, Bernard A. Steinberg, and Bernard Rubin, Squibb Institute for Medical Research, New Brunswick, N. J., for the exhibit on isonicotinic acid hydrazide ("nydrazid"): pharmacology and antituberculous activity.

Certificate of Merit to DuMont F. Elmendorf Jr., William U. Cawthon, Carl Muschenheim, and Walsh McDermott, New York Hospital, New York, and Charles M. Clark, Western Navajo Hospital, Tuba City, Ariz., for the exhibit on isonicotinic acid hydrazide ("nydrazid") in the treatment of tuberculosis.

Honorable Mention to J. Antrim Crellin, J. Stauffer Lehman and Joseph L. Curry, Hahnemann Medical College and Hospital, Philadelphia, for the exhibit on bronchographic studies in bronchiectasis before and after pulmonary resection.

Section on Experimental Medicine and Therapeutics.—Certificate of Merit to K. G. Wakim, M. A. Block, F. C. Mann, and W. A. Bennett, Mayo Clinic, Rochester, Minn., for the exhibit on pathogenesis of acute renal insufficiency—an experimental study of certain factors.

Honorable Mention to E. M. K. Geiling, A. W. Pircio, and E. J. Walaszek, University of Chicago, for the exhibit on biosynthesis and metabolism and radioactive drugs.

Section on Gastro-Enterology and Proctology.—Certificate of Merit to David Adlersberg, Henry Colcher, Stanley R. Drachman, and Chun-I Wang, Mount Sinai Hospital, New York, for the exhibit on the role of cortisone and ACTH in the treatment of therapy resistant sprue.

Honorable Mention to Paul Kiernan and John C. Sullivan, Georgetown University Medical School and Gallinger Hospital, Washington, D. C., for the exhibit on post subtotal gastrectomy syndrome.

Honorable Mention to Louis Zimmer, John Coniaris, Daniel Burbank, Ralph Maffey, and Frank Carrigan, St. Michael's Hospital, Newark, N. J., for the exhibit on the effect of prantal upon gastric motility and secretion in the human.

Section on General Practice.—Certificate of Merit to Robert B. Greenblatt, Medical College of Georgia, Augusta, Ga., for the exhibit on preoperative and postoperative study on patients with Cushing's disease and adrenogenital syndrome.

Honorable Mention to Richard L. Jenkins, Veterans Administration, Washington, D. C., for the exhibit on elements of psychotherapy in general practice.

Honorable Mention to Thomas B. McCullough and K. M. Day, Eye and Ear Hospital, Pittsburgh, Pa., for the exhibit on modern otolaryngology for the general practitioner.

Honorable Mention to A. Henry Clagett Jr., Veterans Administration Hospital, Wilmington, Del., for the exhibit on common complications of myocardial infarction, diagnosis and treatment.

Section on Internal Medicine.—Certificate of Merit to Joseph T. Roberts, University of Buffalo School of Medicine, Buffalo, N. Y., for the exhibit on a new blood supply for ischemic hearts and lungs.

Honorable Mention to John A. Prior, Samuel Saslaw, Clarence R. Cole, and Deane Chamberlain, Ohio State University Hospital, Columbus, for the exhibit on histoplasmosis in man and animal.

Honorable Mention to Paul L. Shallenberger, and Peter Fisher, Guthrie Clinic, Sayre, Pa., for the exhibit on sigmoidoscopy, an analysis of 3,500 consecutive sigmoidscopic examinations.

Honorable Mention to L. B. Woolner, B. Marden Black, F. R. Keating Jr., and David G. Pugh, Mayo Clinic, Rochester, Minn., for the exhibit on primary hyperparathyroidism, a study of 140 consecutive cases between 1928 and 1951.

Section on Laryngology, Otology, and Rhinology.—Certificate of Merit to George E. Shambaugh Jr., Eugene L. Derlacki, Donald W. Shuster, and Jesse E. Waller, Northwestern University Medical School, Chicago, for the exhibit on fenestration operation, a study of failures, their cause and prevention.

Honorable Mention to Walter H. Maloney, Hahnemann Medical College and Hospital and Episcopal Hospital, Philadelphia, for the exhibit on the role of laryngology and bronchoesophagology in medicine today.

Section on Military Medicine.—Honorable Mention to Col. A. W. Spittler (MC) United States Army, Col. E. W. Hakala (MC) United States Army, and Capt. John Payne (MC) U. S. A. F., Walter Reed Army Hospital, Washington, D. C., for the exhibit on ideal amputations and prostheses.

Section on Nervous and Mental Diseases.—Certificate of Merit to Harold C. Voris and Peter V. Westhaysen, Mercy Hospital and Stritch School of Medicine, Loyola University, Chicago, and Lieut. Col. Robert Greenwood, Letterman General Hospital, San Francisco, for the exhibit on the diagnosis of space-occupying intracranial lesions by angiography .

Honorable Mention to Frederic T. Zimmerman, Lauren Long, and Graham Chen, Neurological Institute, Columbia University College of Physicians and Surgeons, New York, for the exhibit on the systematic development and clinical testing of new petit mal compounds.

Honorable Mention to Bela Halpert and William S. Fields, Veterans Administration Hospital and Baylor University College of Medicine, Houston, Texas, for the exhibit on intracranial neoplasms, primary and metastatic.

Honorable Mention to Joseph A. Luhan, Stritch School of Medicine of Loyola University and Cook County Hospital, Chicago, for the exhibit on pathology of nervous disorders.

Section on Obstetrics and Gynecology.—Certificate of Merit to Ferdinand Schoeneck, Department of Health, Syracuse, N. Y., and to Edward G. Hughes, Charles Lloyd, Albert W. Van Ness, and Stella Zimmer, State University of New York College of Medicine at Syracuse, Syracuse, N. Y., for the exhibit on a fetal salvage program, preconceptional treatment clinic.

Honorable Mention to George Z. Wickster, Stritch School of Medicine of Loyola University and Loretto Hospital, Chicago, for the exhibit on posthemorrhagic shock in the newborn, its causes, differential diagnosis, and treatment.

Honorable Mention to Walter J. Reich, Mitchell J. Nechtow, and Angela Bartenbach, Cook County Hospital, Cook County Graduate School, and Chicago Medical School, Chicago, for the exhibit on abnormal bleeding in gynecology, practical approach to diagnosis and management.

Section on Ophthalmology.—Certificate of Merit to A. B. Reese, Frederick C. Blodi, and John C. Locke, Institute of Ophthalmology, Columbia Presbyterian Medical Center, New York, for the exhibit on retrolental fibroplasia.

Honorable Mention to Kenneth L. Pickrell, Thomas Ray Broadbent, and Elon Clark, Duke University School of Medicine and Hospital, Durham, N. C., for the exhibit on tattoo of corneal scars.

Honorable Mention to Col. Victor A. Byrnes (MC) U. S. A. F., United States Air Force School of Aviation Medicine, Randolph Field, San Antonio, Texas, for the exhibit on aviation ophthalmology.

Section on Orthopedic Surgery.—Certificate of Merit to Lee A. Hadley, Syracuse, N. Y., for the exhibit on spondylolisthesis studies, the callus shadow in fifth arch deficiency.

Honorable Mention to Harold Lefkoe, Philadelphia, for the exhibit on the scapulohumeral angle.

Section on Pathology and Physiology.—Certificate of Merit to Bruno W. Volk and Samuel Losner, Jewish Sanitarium and Hospital for Chronic Diseases, Brooklyn, N. Y., for studies on clot density.

Certificate of Merit to Samuel A. Levinson and Max Berg, University of Illinois College of Medicine, Chicago, for the exhibit on acute anuria.

Honorable Mention to Emma S. Moss, J. C. Swartzwelder, Marion Hood, Paul C. Beaver, A. J. Walker, and William W. Frye, Tulane University School of Medicine, Louisiana State University School of Medicine and Charity Hospital of Louisiana at New Orleans, for the exhibit on parasitology.

Section on Pediatrics.—Certificate of Merit to Samuel P. Hicks, New England Deaconess Hospital, Boston, for the exhibit on mechanisms of development of malformations of the nervous system.

Honorable Mention to Harold D. Lynch and William D. Snively Jr., Evansville, Ind., for the exhibit on hypoproteinosis of childhood.

Section on Physical Medicine and Rehabilitation.—Honorable Mention to Howard A. Rusk, Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, New York, Lillian M. Gilbreth, Edith L. Kristeller, and Julia S. Judson, Disabled Homemakers Research Project, New York University-Bellevue Medical Center, New York, for the exhibit on human engineering, a new therapeutic tool.

Honorable Mention to Margaret H. Austin and Anna May Wilson, Chicago, and John Bielawski and Frances Sanderson, Detroit, Mich., for the exhibit on work simplication for cardiac women, a model kitchen.

Section on Preventive and Industrial Medicine and Public Health.—Certificate of Merit to R. R. Sayers, Huntington Williams, Wilmer H. Schulze, Charles E. Couchman, and Emanuel Kaplan, Baltimore City Health Department, Baltimore, for the exhibit on lead poisoning in children.

Honorable Mention to J. Lyell Clark, Des Plaines Valley Mosquito Abatement District, Lyons, Ill., for the exhibit on modern methods of mosquito control.

Section on Radiology.—Certificate of Merit to C. L. Hinkel, George F. Geisinger Memorial Hospital and Foss Clinic, Danville, Pa., for the exhibit on ileocecal valve simulating tumor of the cecum.

Honorable Mention to William H. Boyce, Samuel A. Vest, and John H. DeTar, University Hospital, Charlottesville, Va., for the exhibit on venography of the lower extremities, pelvis, and vena cava, proximal injection technique using buffered 70% urokon.

Section on Surgery, General and Abdominal.—Certificate of Merit to Frank H. Lahey, The Lahey Clinic, Boston, for the exhibit on esophageal diverticula.

Certificate of Merit to Charles B. Puestow, James H. Cross, and George A. Olander, Veterans Administration Hospital, Hines, Ill., for the exhibit on surgical lesions of the esophagus.

Certificate of Merit to Schayel R. Scheinberg, Aran Johnson, Robert A. Gerisch, and Harry C. Saltzstein, Harper Hospital, Detroit, for the exhibit on cortisone in (*a*) the healing of myocardial infarcts and (*b*) the prevention of adhesions in the abdomen, chest, and pericardium.

Honorable Mention to Samuel F. Marshall and Kenneth W. Warren, The Lahey Clinic, Boston, for the exhibit on tumors of the stomach.

Honorable Mention to Marcus H. Rabwin, Beverly Hills, Calif., for the exhibit on the flat film in the differential diagnosis of the acute abdomen.

Section on Urology.—Certificate of Merit to Arthur J. Butt and Joseph Q. Perry, Butt Medical Foundation, Pensacola, Fla., Ernst A. Hauser, Massachusetts Institute of Technology, Cambridge, Mass., and Joseph Seifter, Wyeth Institute of Applied Biochemistry, Philadelphia, for the exhibit on treatment and prevention of kidney stones by increasing protective urinary colloids.

Honorable Mention to Lowrain E. McCrea and Donald L. Kimmel, Temple University Hospital, Philadelphia, for the exhibit on a new concept of bladder innervation and its clinical application to pelvic surgery.

Miscellaneous Exhibits.—Honorable Mention to James Kerns and Charles Bridgman, University of California at Los Angeles School of Medicine and Veterans Administration Hospital, Long Beach, Calif., for the exhibit on plastic embedding of medical teaching material.

The Committee also awarded Certificates of Appreciation to the following:

Ante Vukas, Susak, Jugoslavia, for his exhibit on epidermotectoscopical view of some dermatoses.

W. T. Mustard, A. L. Chute and A. Sirek, University of Toronto, Toronto, Canada, for the exhibit on experimental intracardiac surgery with extracorporeal circulation.

D. G. Miller Jr., University of Louisville School of Medicine, Morgantown and Louisville, Ky., for the exhibit on rural general practice without a hospital.

Lieut. Col. F. B. Rogers (MC) United States Army, Army Medical Library, Washington, D. C., for the exhibit on the army medical library.

H. M. Slater and R. K. Cumming, Children's Memorial Hospital, Montreal, Canada, for the exhibit on pediatric inhalation anesthesia.

N. R. Brewer, E. A. Benbrook, J. V. LaCroix, C. H. Pals, J. R. Pickard, and C. D. Van Houweling, American Veterinary Medical Association, Chicago, for the exhibit on how federal meat inspection protects health.

SPECIAL COMMENDATION

Special commendation is due (1) the Exhibit Symposium on Overweight, Nutrition and Health with its question and answer conferences and motion pictures; (2) the Exhibit Symposium on Cardiovascular Diseases with its question and answer conferences; and (3) the Exhibit Symposium on Diabetes with its question and answer conferences. The sponsoring associations, the active committees, and the participating lecturers and demonstrators may be justly proud of their efforts in offering a most constructive postgraduate course. There is no adequate way of expressing the committee's evaluation of these meritorious features of the Scientific Exhibit.

Special commendation is also due to (1) the Special Exhibit Committee on Fractures and (2) the Special Pathology Exhibit. The committee wishes to cite each member of the committees in charge and each of the participating demonstrators for a task well done. Special commendation is due the Special Exhibit on Artificial Respiration. The cooperating bodies, the members of the active committee, and all those taking part in the demonstrations are worthy of special mention for the excellence of the exhibit and for the enthusiasm of the demonstrations.

The committee could not complete its report without praise for Dr. Thomas G. Hull and his entire staff. The planning that started a year ago has resulted in a Scientific Exhibit that offers a most excellent postgraduate course in a variety of divisions of medicine. No physician who attends the annual meeting and makes an earnest effort to study the exhibits will find himself "behind the times." The ever increasing excellence of these exhibits is brought about by the sincere and thoughtful planning and the assistance of Dr. Hull, Mrs. Hull, Miss Nyberg, Mr. Larson, and Mr. Creer. We salute them!

The committee wishes to point also to the efforts exerted during the year by the section representatives. Much of the credit for the selection of exhibits of high caliber must go to them. The committee is grateful for every assistance in calling attention to the meritorious features of the exhibits in their respective sections. This function in particular will be much appreciated by the future committees on awards.

Finally, the committee wishes to call attention to the Committee on Scientific Exhibit of the Board of Trustees. The silent but guiding influence throughout the year becomes apparent to all who are associated with the Scientific Exhibit. The members of this committee of the Board of Trustees deserve special commendation.

Respectfully submitted,
Committee on Awards
Frank W. Konzelmann, Washington, D. C., Chairman
Fay A. LeFevre, Cleveland
William F. Mengert, Dallas, Texas
Frederick P. Moersch, Rochester, Minn.
Walter Scott, Los Angeles

PROCEEDINGS OF THE CHICAGO SESSION

ABSTRACT OF PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT THE ANNUAL SESSION IN CHICAGO, ILL., JUNE 9-13, 1952

The actions of the House of Delegates at the Chicago Session are herewith abstracted so that the readers may have this information in digest form. The official proceedings will be made available, as in the past, in a booklet, which will be sent to all members of the House of Delegates and officers of the American Medical Association by the Secretary. This booklet will not be available for several weeks.—Ed.

Report of Reference Committee on Credentials

Dr. Karl S. J. Hohlen, Chairman, reported that 185 delegates had registered, and the Speaker announced that a quorum was present.

Invocation

His Eminence Samuel Cardinal Stritch, Chicago, delivered the following invocation:

In the name of the Father and the Son and of the Holy Ghost, amen. Father in Heaven, look down with mercy on these physicians assembled here in convention, who beg Thy help and guidance. Enlighten their minds that they may know more and more the wonders which Thou hast deposited in nature. Strengthen their wills that they may use what they see and what they discover for the benefit of their fellow men. Perfect them in their art, widen their knowledge of their science, give them, in this democracy of ours, to contribute not only to the healing and to the health of the whole body but also to contribute, and contribute abundantly, to making our democracy more and more a reality. Guard them against the fallacies of those who would substitute some other political system for that democracy which we have received from our fathers. Help them in the service of their fellow men. Teach them to walk in the footsteps of Thy divine Son who spent His life in doing good among men. They are a mighty body in our social makeup. We look to them for guidance and help. Be Thou their strength and their protection. We ask these things, O Father in Heaven, in the words which Thy divine Son has taught us:

Our Father which art in Heaven, Hallowed be Thy name.

Thy Kingdom come. Thy will be done on earth, as it is in Heaven.

Give us this day our daily bread.

And forgive us our tresspasses, as we forgive those who trespass against us.

And lead us not into temptation, but deliver us from evil. Amen.

Election of Vice Speaker, Pro Tem

The Speaker announced that the absence of Dr. James R. Reuling, Vice Speaker, because of illness, necessitated the selection of a Vice Speaker pro tem, and Dr. E. Vincent Askey, California, was duly elected.

Adoption of Proceedings of Los Angeles Clinical Session

The Secretary, Dr. George F. Lull, presented the Minutes of the Los Angeles Clinical Session, as printed in The Journal and distributed to the members of the House of Delegates, which were adopted as published.

Roll Call

The Secretary, Dr. George F. Lull, called the roll.

Distinguished Service Award to Dr. Paul Dudley White

Dr. Dwight H. Murray, Chairman, Board of Trustees, presented three names selected by the Board, from five submitted to it by the Committee on Distinguished Service Award, for the election of one by the House of Delegates to be the recipient of the Distinguished Service Award. The nominees were Dr. Donald C. Balfour, Rochester, Minn., Dr. Shields Warren, Boston, and Dr. Paul Dudley White, Boston. On a second ballot, Dr. Paul Dudley White was elected recipient of the Distinguished Service Award of the American Medical Association for 1952.

Telegram to Dr. James R. Reuling

On motion of Dr. R. B. Homan Jr., Texas, seconded by Dr. Mather Pfeiffenberger, Illinois, and carried, the House of Delegates instructed the Secretary to send a telegram to Dr. James R. Reuling, Vice Speaker, expressing the regret of the members of the House that he could not be present and wishing him a speedy recovery.

Address of Speaker

The Speaker, Dr. F. F. Borzell, presented the following address which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

I have recently been called on to discuss the status and structure of the American Medical Association before county medical societies and other medical organizations. In every instance the request came from some active member who had found that a serious lack of knowledge of the scope and function of the Association prevailed among the rank and file of the membership as well as the public. They did not seem to be aware of the tremendous advance in prestige and influence that has raised organized medicine to a level higher than ever in its history.

Just a few weeks ago President Truman blamed and criticized the American Medical Association directly for having stopped a vicious, underhanded attempt to commit Congress to a policy of compulsory health legislation. That charge, however, amounted to an admission that the American Medical Association is a force standing for real Americanism against any effort to carry us further down the road to statism.

If these statements are correct, the question naturally follows, "Why are so many of our members not more vocal and dynamic in their support of the American Medical Association and of our state and county societies?"

This House of Delegates is the very heart of organized medicine. Its deliberations determine the policies and activities of our Association. Officers and spokesmen voice your actions. You are the elected representative of the rank and file of the profession of America. Whatever influence the American Medical Association exerts on American life stems from the deliberations of this body. Quite naturally one may ask, "Does the House of Delegates truly represent the physicians of this country? Is it a true cross section of the doctors of America?" With this question uppermost in my mind and in order to answer the question factually, I essayed to make an analysis of the personnel of this One Hundred and First Annual Session of the House of Delegates. With your indulgence, I shall give you a few figures that may be interesting as well as answer the question.

The present accredited elected membership of the House is 188. This does not include those who are nonvoting members by right of office. It represents those who are elected by constituent state and territorial associations and the sections of the Scientific Assembly and those appointed from the government services.

Some years ago it was customary on the part of those who would gibe us to say that the House was composed of an aggregation of old men who seemed to be elected in perpetuity. An analysis by age, length of service, and professional activities should decide the accuracy of such statements. I found the following:

The age ranges from exactly forty for the youngest to eighty for the oldest, of which there is one. I have since been informed that the eighty year old delegate will not be in attendance at this session. The average age is 59. The age groups are broken down thusly:

40 to 49 inclusive	21 or 11%	averaging 46
50 to 58	78 or 42%	averaging 55
60 to 69	68 or 36%	averaging 64
70 to 79	20 or 11%	averaging 72

Considered from the standpoint of length of service in the House, we note the following: Fourteen new members are serving their first term. Eighteen have served one year excluding this session, twenty-eight two years, twenty-two three years, twenty-five four years, and ten five years. Forty-five have served from six to ten years, twelve from eleven to fifteen years, ten from sixteen to twenty years, and one for twenty-two years. The average length of service is five and one-half years.

I think it is fair to deduct from these figures that there is a healthy turnover of membership and at the same time a sound, experienced membership maintained. It obviously represents a group of men elected by their constituencies because of their serious interest in the objectives of organized medicine.

Another analysis has shown that the members of this House represent every facet of our professional spheres. On data taken from the last American Medical Directory, we find forty-one or 21.6 per cent practicing internal medicine exclusively, thirty-seven or 14.6 per cent surgery exclusively, eighteen or 9.5 per cent general practice, twelve urology, seven obstetrics and gynecology, seven radiology, five pediatrics, and four dermatology. The remainder cover practically the entire field of practice. Seven are state association secretaries. One observation of interest is that fifty-eight, or thirty-eight per cent, hold professorships. This indicates that education is well represented. These figures may mean little or much to you, but to me they are a reasonably graphic picture of the structure of this body and consequently of the American Medical Association.

The present House represents an aggregate of 1,084 years of service. This service has been self-sacrificing, but all have the satisfaction of knowing that this service is continuing to safeguard for the people of America the best quality of medical care anywhere in the world. It is your wise leadership, conservative judgment and fearless adherence to sound ethics and principles that has made the American Medical Association today much more than just an aggregation of self-interested physicians. Today it has become the leader in the defense of our country from the invasion of foreign ideologies. In fact, in recent years, it is because of this leadership that we have been the storm troopers who have had to withstand frontal attacks hurled at our American way of life.

My experience in talking to county societies has led me to the conviction that we as individual members of this House have a responsibility to fulfill that is not limited to our duties during these sessions. You know better than any others what the American Medical Association is, what it stands for, and how it functions. It is our duty, therefore, to grasp every opportunity to talk to professional groups and lay groups as well and let them know just what the Association is. I am sure that if the members of this House will go back to their states with a determination to interpret the wide activities of the American Medical Association to those at home, your deliberations will be supported and activated with greater force than ever before.

The collective responsibility the American Medical Association has to insure for the people progressively improved medical service will be only as effectively met as the individual physician measures up to his personal responsibility. The question should no longer be "What do I get from the American Medical Association?" but "What can I do to strengthen it?" Activation of individual responsibility will result in greater expansion of collective influences. It is your American Medical Association, and you can make it what you will.

I have tried to paint for you a composite picture of this House of Delegates. I think it is a picture which calls for admiration and, as I finally lay down the gavel as your Speaker at the conclusion of this session, I take this opportunity to say to you and America that as long as this House of Delegates of the American Medical Association holds fast to its traditions and record, America will not give way to foreign ideologies and doctrines that can only reduce our people to serfdom in a paternalistic state.

Reference Committees

Your Speaker has appointed reference committees for this session of the House, as follows:

Section and Section Work:

Grover C. Penberthy, *Chairman*, Section on Surgery, General and Abdominal
Paul A. Davis, Section on General Practice
Carl A. Grote, Alabama
Eugene F. Hoffman, California
Herbert L. Bryans, Florida

Rules and Order of Business:

Wyman D. Barrett, *Chairman*, Michigan
Charles L. Shafer, Pennsylvania
Bernard Klein, Illinois
James Q. Graves, Louisiana
John W. Parsons, Maryland

Reports of Board of Trustees and Secretary:

Charles F. Strosnider, *Chairman*, North Carolina
Jesse D. Hamer, Arizona
Hoyt B. Woolley, Idaho
Harold F. R. Brown, New York
F. Sanchez Castano, Puerto Rico

Medical Education and Hospitals:

Edgar V. Allen, *Chairman*, Section on Experimental Medicine and Therapeutics
William R. Brooksher, Arkansas
Charles H. Phifer, Illinois
John J. Masterson, New York
Charles G. Hayden, Massachusetts

Legislation and Public Relations:

Walter E. Vest, *Chairman*, West Virginia
Hugh H. Hussey, District of Columbia
Fred H. Muller, Illinois
Ralph A. Johnson, Michigan
Warren L. Allee, Missouri

Hygiene and Public Health:

William F. Costello, *Chairman*, New Jersey
W. Palmer Dearing, Public Health Service
Robert B. Homan Jr., Texas
James P. Hammond, Vermont
Lewis A. Alesen, California

Amendments to Constitution and By-Laws:

Leo F. Schiff, *Chairman*, New York
John K. Glen, Texas
Joseph F. Londrigan, New Jersey
Robert B. Wood, Tennessee
Roscoe H. Reeve, Wyoming

Reports of Officers:

Julian T. Price, *Chairman*, South Carolina
Ralph B. Eusden, California
Alfred S. Hartwell, Hawaii
F. S. Crockett, Indiana
George Braunlich, Iowa

Credentials:

Karl S. J. Hohlen, *Chairman*, Nebraska
Everett C. Fox, Section on Dermatology and Syphilology
Laurence S. Nelson Sr., Kansas
H. Russell Brown, South Dakota
Howard B. Goodrich, Missouri

EXECUTIVE SESSION:
Clifford C. Sherburne, *Chairman*, Ohio
Carl H. Gellenthien, New Mexico
Willard A. Wright, North Dakota
John F. Burton, Oklahoma
Elmer Hess, Pennsylvania

INSURANCE AND MEDICAL SERVICE:
William D. Stovall, *Chairman*, Wisconsin
William H. Halley, Colorado
Roland W. Stahr, Nevada
J. Stanley Kenney, New York
Britton E. Pickett Sr., Texas

INDUSTRIAL HEALTH:
Renato J. Azzari, *Chairman*, New York
J. Duffy Hancock, Kentucky
Frank H. Krusen, Section on Physical Medicine and Rehabilitation
John J. Curley, Massachusetts
L. Howard Schriver, Ohio

MEDICAL MILITARY AFFAIRS:
Joseph H. Howard, *Chairman*, Connecticut
John W. Green, California
George M. Fister, Utah
Herbert B. Wright, Ohio
Walter P. Anderton, New York

CONSULTANTS
Silas B. Hays, United States Army
Clarence J. Brown, United States Navy
Dan C. Ogle, United States Air Force
Arden Freer, Veterans Administration

MISCELLANEOUS BUSINESS:
Patrick J. Sullivan, *Chairman*, Massachusetts
B. R. Kirklin, Section on Radiology
Jay J. Crane, Section on Urology
Ross Wright, Washington
Peter M. Murray, New York

TELLERS:
Martyn A. Vickers, *Chairman*, Maine
Lawrence L. Fitchett, Delaware
Raymond F. Peterson, Montana
Deering G. Smith, New Hampshire
Charles H. Richardson, Georgia

SERGEANTS AT ARMS:
Raymond M. McKeown, *Master Sergeant*, Oregon
Arthur A. Brindley, Ohio
Alvia G. Young, Washington

IN MEMORIAM

The Speaker read the list of names of former members of the House of Delegates and Officers of the Association who had passed away during the past year, after which the members of the House rose in respect to the departed members and officers.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS

Dr. Julian P. Price, Chairman, presented the following report, which was adopted:

In his factual and analytical study of the House of Delegates, our Speaker, Dr. Frank Borzell, has laid to rest the oft-heard criticism that this body is not a democratic organization, but that it is rather a body consisting of old men who hold office in perpetuity. The average age of the members of this House of Delegates is shown by Dr. Borzell to be 59 and the average length of service five and one-half years. At this very session, fourteen delegates were seated for the first time, and eighteen others are in their first year of service. Dr. Borzell also analyzed the different fields of medicine which are represented by the various delegates, and shows conclusively that all fields are represented, and that no one group or specialty dominates the membership. Your committee commends Dr. Borzell for this instructive and enlightening study of the House of Delegates and urges that the facts which it presents be given wide publicity among the rank and file of our membership.

In his concluding paragraph, Dr. Borzell states that at the close of this session he is laying down the gavel as Speaker of the House. The task of the Speaker of the House is no easy one, beset as it is with many difficulties, headaches, and parliamentary snarls. Your committee commends Dr. Borzell for his faithful and unselfish service and recommends that this House of Delegates extend to him a rising vote of thanks for the work which he has done.

Your committee noted with sadness the list of forty-eight former members of the House of Delegates and/or officers of the American Medical Association who have died since our last annual meeting. Some of these men served for but a year while others had devoted a decade or more of active service, and yet each in his own way left his impress on our Association. It is on the work of these men and others who have gone beyond that we are building today and we are truly and humbly grateful for what they did.

Address of the President, Dr. John W. Cline

Dr. John W. Cline, President, presented the following address, which was referred to the Reference Committee on Reports of Officers, with the exception of two paragraphs dealing with the osteopathic profession, which were referred to the Reference Committee on Miscellaneous Business:

Mr. Speaker, Members of the House of Delegates: The past year has been busy and somewhat strenuous for your President. It has carried me to many states and all parts of the country.

It has been gratifying to observe the growing unity and increasing vigor of the profession. The degree varies in the different states, but the trend is apparent everywhere.

The past year represents one of great achievement in medicine. There have been important additions to our scientific knowledge, and we have learned to reduce farther the latent period between the establishment of scientific fact and its practical application in diagnosis and treatment. Rapid dissemination of information by means of meetings and publications and the increased cooperative effort by investigators in common and differing fields have contributed to this process. Scientific medicine now is coordinated to a degree never previously attained.

Medical education at all levels–undergraduate, graduate and postgraduate–has continued to improve. Graduate education has suffered to some degree as a result of defense mobilization, and we must plan now to provide opportunity for those in the armed forces to complete their training when returned to civilian life. Perhaps the most significant advance is to be found in the field of postgraduate education. More planned postgraduate courses have been offered and, in some instances, these have been carried to the physician in his home community. The attendance at meetings, which have been better organized and of high quality, has increased.

Medical care has increased in quantity as well as in standards. The American people enjoy more abundant and better medical care than ever before. The ratio of physicians to population has increased and there is better distribution of physicians. Improved transportation, better facilities and greater use of auxiliary personnel have permitted the physician to make better use of his time and render better care to more people over a wider area.

The interest of medical students in general practice and in rural practice has been fostered by the medical schools, the state associations and the American Medical Association. These efforts, coupled with the placement agencies of our state and national organizations and the increased assumption of responsibility by local communities for providing medical care, have resulted in placing many physicians in areas in need of their services.

Until comparatively recently inducing physicians to locate in places needing them was considered to be solely the responsibility of the profession. It now has been demonstrated that young, well-trained physicians will go readily to communities in which they are able to practice medicine of the high quality learned during their medical school and hospital years. They will remain if the community will avail itself of their services throughout the year and if living conditions and educational facilities are adequate to provide satisfactory surroundings in which to raise a family. There are abundant examples of success in obtaining and holding physicians when the community undertakes its portion of the burden of improving the facilities for practice and providing adequate educational opportunities for children. These serve to focus attention on certain essential aspects of community life.

Plans for protection against the costs of illness have grown and improved during the past year. More than 85,000,000 Americans now have Blue Cross or other hospital coverage, 65,000,000 have surgical, and 28,000,000 medical and surgical protection. During the year, additional millions of Americans have enrolled in these programs, demonstrating that American problems can be solved by American methods and far more successfully than by resorting to government for a partial solution restricted within the rigid framework of legislation. The multiplicity and elasticity of our plans stimulates experimentation and encourages the orderly process of evolution. This ultimately will provide us with a plan or plans which will be generally recognized as the most nearly ideal for our people.

The plans for prepayment have undergone considerable development in the past year. Coverage against economically catastrophic illness has become more general. Individual coverage is more available and experiments in covering the aged are under way. The rural population has wider protection. More must and will be done in these areas as time passes. Gaps have existed and some still exist but these are being closed.

Over the country one finds variation in the interest of the profession and the backing it gives to the voluntary insurance program. On the whole it is good and is improving. The voluntary plans fill a great need and render a great service to our people. On this basis alone they deserve our full support. Unquestionably they are far from perfect and defects exist in some plans. Where changes are needed let us strive to bring them about in a constructive fashion. Destructive criticism and withholding support and cooperation interfere with proper development and damage the entire program. Injury to the voluntary movement would jeopardize our future freedom.

Opinion is almost unanimous that a strong and successful voluntary insurance program is our greatest bulwark against the socialization of medicine. This opinion is held by many of our friends in other fields of endeavor and in public life. It is shared by those who would destroy the high standards of American medicine by placing it under bureaucratic domination. Some of these belittle the accomplishments of the program and some have tried to interfere with its development because they realize that it stands as a barrier against the accomplishment of political medicine. We have recognized and accepted our responsibilities to provide the American people with medical care of continuously improving quality and to make that care more easily available to all. We must continue our efforts.

On the other hand, there is also growing recognition of a coexistent responsibility on the part of the public. It has been said that the plans for extension of medical care are solely the responsibility of the medical profession. It is essential that the public, the plans and the hospitals assume their portions of the burden. The provision of medical care is not a one way street, and others must meet their obligations as well.

In the course of twenty years of dealing with medical problems on the local, state, and national planes, I have watched these problems multiply and become more complex at all levels. As medical care and health have become more prominent in the minds of the people, this change has been inevitable. As public interest has increased in these matters, we have come more closely under public scruitiny. As medical affairs have become more important, our relations with other groups have become more important and the operations of the American Medical Association have become more important. These activities have been strengthened in many ways. A large number of individuals have been responsible. They are too numerous even to mention at this time, although I have drawn attention to some of their activities during the year through the medium of the President's Page. The headquarters staff consists of almost nine hundred loyal, hard-working employees distributed in twenty departments. With the exception of the purely organizational departments, all are working full time directly or indirectly in the public interest.

I cannot allow this opportunity to pass without paying my respects to our calm, efficient and extremely able Secretary and General Manager, Dr. Lull, and to his very capable, energetic and loyal assistant, Dr. Howard, who direct the staff. During the past year numerous changes have been made in the interest of more efficient operations. The quality of THE JOURNAL has continued to improve under the admirable direction of the Editor, Dr. Austin Smith. In my travels about the country I have heard many compliments, few criticisms of THE JOURNAL, and almost unanimous approval of the changes he has instituted. THE JOURNAL has increasingly justified its reputation as the most highly respected and most widely read medical journal in the world.

The Board of Trustees is composed of fine, sincere, and able men who labor arduously and with serious purpose dealing with the many matters demanding their attention. As the problems of medicine have multiplied, the agendas have increased in length. It is only by close application to its work, under the capable and efficient direction of its splendid and devoted Chairman, Dr. Dwight H. Murray, that it is able to perform the many tasks assigned to it. I wish to express my deep appreciation to the Board and its Chairman for the excellent record of accomplishment of the past year.

To you, the members of the House of Delegates, I wish to express my compliments and my appreciation of the character of your deliberations. In your meetings you have considered and debated many matters. The serious responsibility of determining the basic policies of American medicine is yours. The decisions you make and the methods of expressing them are of great importance. The thought, diligence, and care you have devoted to your transactions have clarified the position of medicine and have built well for the profession.

During the past year more attention has been paid to the relationship of medicine to other professions. The association with other groups concerned with the care of the sick has become closer. Problems still exist in certain areas of contact but progress has been made and is being made in dealing with them. Some will require long periods for complete solution. No problem is too difficult to solve if patient men of good will approach it in a spirit of cooperation. An excellent example is the successful conclusion of the negotiations in the establishment of the Joint Commission on Accreditation of Hospitals.

The medical profession and the hospitals are interdependent. What affects one affects the other. There is growing concern over mounting hospital costs, and the hospitals have been unduly criticised because of them. We can do much to dispel misconceptions by explaining to our patients the reasons for this situation. About 65 per cent of hospital costs are attributable to salaries and wages. As scales of compensation have risen, costs have risen correspondingly. In addition every item which the hospital must purchase is more expensive due to the spiral of inflation which involves our entire economy. On the other hand, certain hospitals continue to engage in the practice of medicine in defiance of established principles and in contravention of the law in most states. There is, I believe, widening recognition by hospitals that the practice of medicine is the practice of medicine whether performed within or without the hospital. We recognize the right and the necessity for hospitals to derive income from certain departments staffed by physicians, and ethical arrangements have been worked out whereby the rights of all concerned are respected. The hospital must not become dominant in the practice of medicine. This appears to be the objective of a small minority of administrators and trustees.

The curriculums of modern osteopathic schools now are patterned largely after those of schools of medicine. The level of education provided by some has improved since the conclusion of the last war. There have been recent discussions between a committee of our Board and a similar group of the American Osteopathic Association. The representatives of the osteopathic profession express a desire for our assistance in further improving the education of students in osteopathic schools. In thirty-odd states the licenses granted to osteopathic physicians approach or approximate, for practical, legal purposes, those granted to doctors of medicine. We cannot accept or recognize the basic concept of osteopathy as a valid method of treatment of disease. The osteopathic profession apparently appreciates that fact as evidenced by the progressive reduction of the emphasis on the teaching of osteopathy in favor of instruction in medicine and surgery. Removal of the stigma of cultism would hasten that process.

It is my considered opinion that the Council on Medical Education and Hospitals should be permitted to aid and advise schools of osteopathy, and that we should facilitate the opportunities of these schools to improve their faculties by removing any barrier of unethical conduct on the part of doctors of medicine who may teach in these schools. I recommend that the House take action to implement these suggestions.

We must continue to strive for greater cooperation between the various organizations of medicine and the dental, nursing, and pharmaceutical professions. Closer relationship will work to the advantage of all.

The public relations of medicine have improved, but much remains to be done. In one sense, the esteem in which medicine is held by the public is the total of the patient-physician relationships of the entire country. The good deeds of the ninety-five per cent or more of the profession go unnoticed and are taken for granted. The transgressions of a very small proportion of physicians do untold harm to the entire profession.

Our code of ethics is not a body of law but is a pattern for conduct. In a sense it is the code of the gentleman in the practice of medicine. Even if it did not exist it would not be violated by many because the vast majority of our members are gentlemen. We have long recognized and subscribed to the dual obligation of the physician to his patient: To render to the patient the best possible medical care and to deal fairly with him in all ways. Unfortunately there are a few of our colleagues who do not respect these obligations. When these are encountered, they must be thrust from the company of gentlemen. There can be no compromise with dishonesty or unethical conduct. We owe forthright action not only to the public but to ourselves. Respect, to be maintained, must be deserved.

Grievance committees have gone a long way in improving the situation, but the mere existence of such committees is not enough. They must be composed of physicians who are respected, not only for their professional attainments but, also, for their character, impartiality and courage. These committees must be active, easily available, and the public must be informed of them and the means of access to them. These provisions will do much to inspire public confidence. The work of these committees can be greatly reduced if the physician will discuss all aspects of his services to the patient at the outset of his contact with him. This procedure will reduce misunderstandings to a minimum and, since most complaints against the profession are based on misunderstanding, these will be greatly lessened.

There also has been a great change in the public position of medicine. Medicine and the American Medical Association had been subjected to years of the most vicious, systematized campaign of vilification ever waged against a respectable profession and organization devoted to the public interest. We were not prepared to meet these onslaughts. You all recall vividly the situations which confronted us in December, 1948. Conditions have changed. We are stronger, more unified, and are better able to prevent the destruction of the high standards of medical care inevitable in socialistic schemes of its administration. Medicine has become a significant force in American life. The vigorous support of physicians and others throughout the country who perceived the danger to the future quality of medical care has brought about this transformation. This activity stemmed largely from the National Education Campaign so ably directed by Clem Whitaker and Leone Baxter. They deserve great credit for their splendid performance in the face of many difficulties. I wish to express the gratitude of American medicine and my own personal thanks to them for an important job well done. When one thinks back over the period of three and one half years and observes the change, he cannot help but be impressed. In that short time medicine has changed from an ideal whipping boy for any demagogue who wished to make a rabble rousing speech into a strong body able to respond with sufficient vigor and effectiveness to make the profession an unwise object to attack.

In the long view an even greater contribution, perhaps, has been the insistence that we meet the problems confronting medicine on a positive, constructive basis, and that the Association develop a strong public relations department of its own to deal with matters of fundamental importance now and in the years to come. I have described the department and its operations in a President's Page and believe it to be growing in effectiveness.

As a result of our efforts and the increasing strength of medicine, those who would destroy our capacity to render the best care to the American people have altered their strategy. As far back as the 81st Congress it was apparent that no all-inclusive bill for socialized medicine could be passed. Our opponents realized this earlier than did we and altered their course correspondingly. They ceased the effort to overwhelm us by frontal attack and resorted to more subtle flanking maneuvers by concentrating on the so-called fringe bills, the most important of which was federal aid to medical education. To date we have been successful in preventing legislation which would have placed the medical schools of this country in imminent danger of bureaucratic control. We recognize that our medical schools are in financial distress, and we are making an effort to alleviate this situation through the American Medical Education Foundation and the National Fund for Medical Education. The results to date, this year, are more encouraging than in the first year. Every one of us owes a great debt to medical education and it must have our fullest support. Medical education is every doctor's business.

Another manifestation of the recognition of changed conditions has been the politically inspired appointment of the President's Commission on the Health Needs of the Nation. There is adequate evidence to establish that it was created for the purpose of removing a very troublesome issue from public consideration during an election year. This course of action was predicted by a competent observer months in advance and we now have sufficient information of the immediately preceding events to know this to be the case.

A very important figure in the Democratic Party in March, 1951, told me that he felt that this mechanism would be utilized to remove what would be a troublesome issue in the coming campaign. A visiting minister of health of a foreign country, after visiting President Truman, made somewhat similar comments. In early October a man employed in the administration went to a friend of medicine and asked his assistance in designing ways and means of accomplishing this end. Soon thereafter, out of Washington came information that these plans were in the making. By shortly after the middle of October one physician had been approached and asked to head up such a committee. He refused to do so. In November another outstanding physician was so approached. He also refused to do so, recognizing the political implications. Another physician accepted for reasons best known to himself. On the basis of the knowledge that we have of all of these preceding events, there can be no reasonable doubt in anyone's mind that this Commission was designed and appointed for a political purpose and for no other reason.

Doubt remaining in the mind of anyone concerning the political motives behind the creation of the Commission should have been dispelled by the President's recent unwarranted, undignified, and intemperate attack on the American Medical Association. It is apparent that the Administration's intention to socialize medicine has undergone no change. It is obvious that it will resort to parliamentary legerdemain to accomplish what cannot be achieved by more direct and honest methods. The angry petulance of the outburst provoked by the Association's exposure of the political trickery involved in H. R. 7800 reveals the true colors of the Administration.

The Commission was assigned an impossible task to perform within the period of time allotted and has been described, perhaps facetiously, as an organization whose principal accomplishment would be to survey all preexisting surveys to decide if additional surveys were needed. I have discussed the appointment of this body at length elsewhere. The Board of Trustees was unanimous in denouncing its creation and the political purposes behind it. Primarily out of deference to the chairman of the Commission, the American Medical Association has made the information in its possession available to the Commission, and has authorized officers and employees to testify before it while completely and thoroughly disapproving of its appointment. After such testimony has been given, by participation in panel discussions, agents of the Commission have made purported digests of the testimony. In certain instances these have ignored completely most of the statements made to the Commission. Participants have then been requested to approve or amend the distorted digests. To amend the statements adequately would require days of effort in addition to the time occupied by traveling to and from Washington and testifying. The digests have the appearance of preconceived editorialized opinions of the person or persons preparing the abstracts and do not report fairly the points of view presented to the Commission. It is obvious that this procedure is not compatible with fair presentation of the facts. I bring this situation to the attention of the House to the end that it may be able better to evaluate the ultimate report.

In view of the magnitude of the task, the limited facilities and the short period of operation, characterized by the Commission chairman as "too big a job for one year," any report emanating from it must be carefully examined. It will not only be based on inadequate time and opportunity for study but may have all the misleading and dangerous attributes of a snap diagnosis. The report may be voluminous and impressive in appearance but also may reflect the preconceived ideas of a majority of the Commission. It must be scrutinized with great care.

That brings me to something on which I would much prefer not to comment. It has been the effort of the American Medical Association not to criticize in any sense any of the members of this Commission. Many of you will recall an article in *Time* magazine some months ago in which the American Medical Association was said to have been bitterly criticized by the Chairman of this Commission.

As time has gone on there have been repeated quotations in the news of bitter criticisms directed toward the American Medical Association by the Chairman of the Commission. The most recent of these is reported in the *New York Times* on June 4. I shall read you one brief section:

"When you speak of the American Medical Association you're speaking to me of a political group. If you want to talk about something that politicos in Washington, the people and American doctors can agree on, I think that is possible. I don't think you can please politicos all over the country, whether they're medical politicos or other kinds."

Hoping that this was a misquotation, the Board of Trustees sent a telegram to the Chairman of the Commission which simply quoted what I have just read to you, and asked if this were substantially correct or not. The reply telegram is as follows, and I shall read it in detail:

"Answering your telegram June 6, 1952, what I said to the *New York Times* and other reporters who were present, in response to the question, 'Do you think you can write a report which will please the AMA and the President?' was 'Are you talking about politicos or American doctors and American people? If you're thinking about American doctors and American people, I think there can be recommendations made that will please most of them. I don't believe this Commission or any other can satisfy politicos, whether they be medical or otherwise.' "

I would call to your attention the fact that the telegram sent by the Chairman of the Board of Trustees asked specifically for an affirmation or denial of the characterization of the American Medical Association as a political body. I think the time has come when we can no longer ignore that variety of attack on the American Medical Association and American medicine.

I assume these remarks are accurate, because of the failure of the Chairman of the Commission to deny them when he was specifically asked for affirmation or denial, and because of the often-repeated statements of similar nature. If they are, and considered in conjunction with other quotations in certain of the articles, there appears to have been a bland assumption of omniscience in medical matters which is amazing and disturbing.

Let us not be misled by the apparent quiet of the moment. Our battle is not yet won. Complacency could well be a fatal error. I recall clearly the false security of 1946 at which time it was said that socialized medicine was "as dead as a dodo." Two years later American medicine confronted the gravest crisis in its history. There also are important external threats as will be detailed to you by Dr. Bauer.

Few persons realize the distance we have traveled, as a nation, down the road to socialism. As physicians we know that in the course of many diseases a point is reached where the changes of structure in the tissues become irreversible and restitution of normal function becomes impossible. The disease of socialism which affects our body politic is at the present time not far from that point.

This may well be *the* year of decision. Unless the trend toward an all powerful government progressively extending its influence into our daily lives, limiting our horizons and sapping our initiative is halted, the changes in our political, economic and social structure will soon have reached the state of irreversibility. If this occurs, we shall have sacrificed the most precious heritage any nation ever had, and for a mess of socialistic pottage.

Medicine's firm stand has encouraged others to resist this process. At the present time we have more and stronger allies than ever before. I urge every citizen who values the American tradition of freedom, opportunity and dignity of the individual to utmost effort this year. This may be our last chance to preserve those essential ingredients of American life. Our leadership has inspired others. We have a great responsibility and a great opportunity. Let us not be in default.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS

Dr. Julian P. Price, Chairman, presented the following report, which was adopted:

In comprehensive and masterful style, our President, Dr. John Cline, presented a picture of American medicine today-its achievements, its problems, its responsibilities. It is a message which should be carried to every member of our Association and we would recommend that, in addition to its publication in The Journal of the American Medical Association, a copy of this message be sent to the editor of each state medical journal with the suggestion that it be printed in full or that it be used as the basis for editorial comment.

Your committee noted the modesty with which Dr. Cline referred to his personal activities. Your committee knows of the tremendous amount of time and energy which Dr. Cline has devoted to the work of the Association during the past year and commends him for the dynamic leadership and unselfish service he has given to the physicians of the United States.

Committee of the Whole

On motion of Dr. Warren W. Furey, Illinois, seconded by Dr. Harlan English, Illinois, and carried, the House resolved itself into a Committee of the Whole for the purpose of considering a Resolution on the President's Commission on the Health Needs of the Nation, the Vice Speaker Pro Tem serving as Chairman of the Committee.

The resolution was presented and, on motion duly seconded, and carried by a vote of 85 to 77, was tabled.

The House rose from the Committee of the Whole, and the Chairman reported that there was no business to be referred to the House of Delegates from the Committee.

Presentation of President-Elect Louis H. Bauer

The Speaker presented to the House the President-Elect, Dr. Louis H. Bauer.

Presentation of Past President Ernest E. Irons and Invited Guests

Dr. Ernest E. Irons, Past President, was presented to the House by the Speaker, and Dr. Irons, in turn, introduced the following distinguished guests, who brought greetings from the organizations they represented: Dr. Harold Hillenbrand, Secretary, American Dental Association; Mr. George Bugbee, Executive Director, American Hospital Association; Dr. J. G. Gathings, President, National Medical Association; Dr. Robert P. Fischelis, Secretary, American Pharmaceutical Association; Dr. Norman R. Booher, Vice Commander, National Rehabilitation Committee, The American Legion; Dr. Gaylord W. Anderson, President, American Public Health Association; Dr. J. G. Hardenbergh, Secretary, American Veterinary Medical Association; and Dr. Herman Smith, American Association of Hospital Consultants.

Resolution on President's Commission on the Health Needs of the Nation

The Vice Speaker Pro Tem announced that proper parliamentary procedure had not been followed in the presentation and consideration of the Resolution on the President's Commission on Health Needs of the Nation in the Committee of the Whole. The Speaker called on Dr. Warren W. Furey, Illinois, who presented on behalf of a group of delegates the following resolution, which, after discussion, was referred to the Reference Committee on Legislation and Public Relations:

Whereas, In the course of American medicine's crusade to preserve an unfettered system of medical care and to prevent the attempted socialization of medical practice, the profession has won the staunch support of the vast majority of the American people; and

Whereas, The facts now demonstrate conclusively that the establishment of President Truman's Commission on the Health Needs of the Nation was politically motivated and was designed to relieve him and his administration of the unpopular issue of compulsory health insurance during a critical election year; and

Whereas, Dr. Paul B. Magnuson, Chairman of President Truman's Commission, has used his office repeatedly in recent weeks for unfactual and bitter attacks on the medical profession and on the American Medical Association for its disclosures concerning the political inspiration of the Commission; and

Whereas, Despite Dr. Magnuson's naive assumption of the bona fide nature of the President's objectives in appointing the Commission, the vast majority of competent medical men are aware that the Report on the Health Needs of the Nation, scheduled to be turned in to the President "in the fall" cannot possibly be accomplished in the few months of the political year allotted to its preparation and must of necessity be a snap diagnosis which can only confuse and mislead the American people; and

Whereas, The facts indicate that Dr. Magnuson, though still declaring his opposition to socialized medicine, has become an unwitting captive of the forces of socialization and is performing a damaging disservice both to his profession and to the medical welfare of the American people; *now therefore be it*

Resolved, That the House of Delegates of the American Medical Association does publicly commend those who have been responsible for medicine's successful and widely supported crusade; and be it further

Resolved, That the House of Delegates does publicly disapprove of Dr. Magnuson's unwarranted attacks on the leadership of American medicine, and that it also expresses a complete lack of confidence in the Truman Commission headed by Dr. Magnuson, which is now disclosed as a politically-inspired agency of the administration.

Report of Reference Committee on Legislation and Public Relations

Dr. Walter E. Vest, Chairman, presented the following report, which, together with the substitute resolution submitted therein, was adopted:

Your committee gave long and careful consideration to the resolution offered by Dr. Warren W. Furey. Much discussion and advice were offered by various individuals as to the background of this resolution. It became apparent to your reference committee that negotiations for the formation of the President's Commission on the Health Needs of the Nation began in the fall of 1951. Dr. John W. Cline, with full approval of the Board of Trustees, reported in his "President's Page" in The Journal for Jan. 19, 1952, the reasons for believing that the President's Commission was formed as a matter of political expediency. These reasons follow:

The formation of the Commission constituted a complete change of strategy on the part of the Administration in Washington, a change of strategy which seemed to be calculated to relieve some of the pressure which had developed as a result of dissatisfaction with Mr. Oscar Ewing's proposals. The timing of this shift is important, since it came during a campaign year. The Commission was established as an emergency, under conditions which would prohibit its continuing to function beyond one year. The Commission was not established by legislative action of the Congress, under which conditions it might have continued long enough to investigate thoroughly all aspects of the problem.

The Chairman of the Commission informed this committee that he knew before accepting the chairmanship that the task outlined for the Commission could not be fully and adequately completed in the allotted time. In his testimony before this committee, Dr. Magnuson stated that he undertook this task as a public service to his country, and that this action of his entailed considerable financial sacrifice.

The attitude of the Board of Trustees is best conveyed by quoting from a letter sent to Chairman Magnuson under the date of Feb. 13, 1952, part of which follows:

It has long been the policy of the American Medical Association, as you undoubtedly know, to permit all survey and study groups to have access to medical data in its possession, and, in accordance with this policy, such information will be made available to your Commission.

The Board's action in making this information available to the Commission, however, should not be construed as implying approval of the Commission or its projected program, which we believe to be of political intent. The Association's position in opposition to the creation of this Commission has been previously stated and is unchanged.

The American Medical Association further demonstrated its cooperation with Chairman Magnuson by permitting officers and staff members to participate in panel discussions of the Commission, and a number of them did.

In his testimony before this committee, Dr. Magnuson stated that no preliminary reports would be offered, and he disavowed a press release given out from his office that such preliminary reports would be made.

Your committee has received testimony from persons who have participated in panel discussions of the President's Commission and who subsequently have received abstracts of their remarks as prepared by employees of the Commission. The nature of these abstracts supports the impression that the thoughts the speakers intended to convey to the panel were colored and slanted in the preliminary abstracts.

Your reference committee has neither the time nor the facilities for verifying this impression. Despite such preliminary impressions, your committee believes that no judgment of the final report of the President's Commission which is to be made in December, 1952, should be undertaken until after its publication. Proper evaluation of that final report will require time and study before opinion from the American Medical Association can be given.

We commend the Board of Trustees for the restraint it has shown regarding some of the statements that have been attributed to Dr. Magnuson in the past. We believe that the Board acts correctly in not attempting to answer every criticism by individual members of the medical profession, and we believe, further, that it has acted properly in pointing out certain inaccuracies and misstatements, in particular those which seek to distinguish between the Board of Trustees and officers of the American Medical Association and the Association itself. We and the 137,000 members are the American Medical Association and the Board of Trustees is a part of us.

In consideration of the foregoing, your committee offers the following resolution as a substitute for the resolution introduced by Dr. Furey:

Whereas, The House of Delegates for many years has clearly enunciated principles of policy for dealing with problems concerning the health needs of the Nation; and

Whereas, The officers and the Board of Trustees of this Association have diligently followed these principles; now therefore be it

Resolved, That the conduct of the officers and the Board of Trustees regarding the President's Commission is a re-affirmation of the principles subscribed to by the vast majority of the members of the American Medical Association.

Report of Board of Trustees

Dr. Dwight H. Murray, Chairman, presented the following report of the Board of Trustees (see The Journal, April 19, 1952, pages 1424-1426, for the Financial Statement and Treasurer's and Auditor's reports) which was referred to reference committees as follows:

To the Reference Committee on Legislation and Public Relations: Report of Committee on the Twelve Point Program, and Report of Committee on Legislation.

To the Reference Committee on Reports of Board of Trustees and Secretary: Report on Matters Referred by House of Delegates; Financial Statement; Tax Deductions for Postgraduate Study, and Treasurer's Report.

The Speaker asked the House for immediate adoption of the memorial to Dr. Oscar B. Hunter, and this was done on motion of Dr. Harlan English, Illinois, seconded by several and carried.

The Speaker stated that the Invitation for 1955 Annual Session was informative only and would be acted on at the proper time later in the session.

To the Members of the House of Delegates of the American Medical Association:

In accordance with the instructions of the House of Delegates at its sessions in June 1950 and 1951, the Board of Trustees herewith presents, for any action the House of Delegates may deem necessary and appropriate, the report of the special committee appointed to consider and review the Twelve Point Program of the American Medical Association:

REPORT OF COMMITTEE ON TWELVE POINT PROGRAM

The function of this Committee, originally appointed to review the Twelve Point Program, has been broadened to include the formulation of certain principles to guide the future action of the Association. This Committee is conscious of the gravity of its responsibility and submits this report with no undue pride of accomplishment, and with no purpose of defending its details against suggested changes or additions.

THE TWELVE POINT PROGRAM

This Committee was directed by the Board of Trustees to study the Twelve Point Program and to review it in the light of changing conditions. This action was taken in response to a resolution passed by the House of Delegates in San Francisco in June 1950.

This Committee feels that the Twelve Point Program has served and is serving a great purpose in that it sets forth our objectives and focuses the attention of the public on some of the important problems of medicine. It should be preserved as written for historical purposes. However, it needs to be supplemented by a statement of principles and policies to guide us when faced with specific problems.

STATEMENT OF POLICIES

The fundamental policy of the American Medical Association is expressed in its Constitution and Principles of Medical Ethics. Article II of our Constitution states that "the objects of the Association are to promote the science and art of medicine and the betterment of public health." This is a simple and comprehensive statement of purpose and would not need elaboration except for certain practical considerations. In county, state and nation we are faced with proposals affecting medicine and the future medical welfare of the public. Since physicians, by reason of their training and experience, are best qualified to foresee the effect of these proposals for good or evil, it is our duty to devote ourselves to the solution of the problems presented and to make clear to the public our reasons for positions taken. It is for this purpose that the Twelve Point Program was formulated. Any such statement, however, requires interpretation in terms of action. Action becomes imperative when we are faced with obvious medical needs or with proposals coming from within or without our Association having for their declared purpose the betterment of public health or the advancement of the science and art of medicine.

Every year bills are introduced into our law-making bodies affecting medicine in its several branches and the medical welfare of the people. Research, medical and allied professional education, hospital expansion, hospital consolidation, school health, public health, the practice of medicine, compulsory health insurance, and the reorganization of government medical services have been the theme of one or more of these bills or proposals. The problems posed by some of these bills are difficult of solution. In most of them the purpose as set forth in the preamble is admirable, even if not always realistic. Examination of their contents, however, often discloses that administrative features, methods of implementation or plans of financing may be so objectionable in character as to outweigh any possible good that might result from their enactment.

The advances of medicine during the past fifty years have been amazing. The progress of medical education, the increase in professional personnel, the development of technics and technical equipment, and the expansion of facilities have been reflected in enormous dividends of relief of suffering, lowered mortality and prolongation of life. Improvement in communications has placed most of the people of the United States in practical reach of modern facilities and together with technical help has greatly increased the productivity of the individual physician. Extension of the public health services has brought environmental sanitation and preventive medicine to the major fraction of our people. These advances have been accomplished under a free system, without undue federal direction or compulsion and with relatively little Federal financial aid. The progress made in this country with its vast area, diverse problems and multiple political, social and racial divisions has exceeded that of any other major country in an equal period of time. We are keenly aware that much remains to be accomplished in the fields of medical endeavor. We have no sense of complacency or of final accomplishment. We shall continue to work toward the correction in an orderly fashion of the deficiencies in medical service, always mindful of the basic philosophy that underlies the Constitution of our country.

When, however, radical changes are proposed in our present system of medicine they should be critically examined and analyzed. They should be considered not only from the angle of laudable intentions as expressed in the preamble of many bills, but also as to the possible effect of such proposals on the future quality of medical care and their further effect on our political, economic and social institutions.

It is therefore our reasonable and proper duty to formulate and declare the principles that guide our action in supporting or opposing proposals affecting medicine and the health of the public.

It is our purpose:

To preserve and enhance the quality and quantity of medical care and to provide a wider distribution of medical facilities and of good medical care;

To maintain and improve the basic factor in good medicine, namely, the personal responsibility of a physician to the individual patient and the patient's share in responsibility for his own health and that of those dependent on him;

To assure for each patient complete privacy of his medical records and for each physician freedom to practice medicine according to the best medical precepts and the accepted ethics of the profession;

To promote the continued progress of the science and art of medicine and to guarantee the complete scholastic freedom of medical schools, medical research and medical teaching, and to protect the practice of medicine from political control or interference, and

To scrutinize the many proposals for the betterment of medicine and public health and make known our conclusions to the end that singly or together they may be brought within the ability of the people to pay and without jeopardizing our national economy or undermining our constitutional guarantees.

In order to secure these objectives, to safeguard the great advantages of a free system and to protect the science and art of medicine from destructive changes injurious to the patient, we believe that certain other requirements should be stated and should serve as a guide to our action.

1. Federal medical services under trained professional directions should be organized in such a way as to assure conservation of personnel, joint use of available facilities and joint planning of hospital construction and location in order to promote economy and efficiency in the operations of medical services on the Federal level.

2. The whole question of Federal subsidy and of the partition of our tax resources between the Federal, state and local governments needs to be reexamined and reevaluated. We are opposed to further extension of Federal subsidy except in those instances where it can be shown that in fact the security of our country would otherwise be threatened. The flow of the major fraction of our tax money into the Federal treasury and its redistribution to the several states in the form of grants or subsidies is a dangerous procedure and if not checked endangers the integrity of our form of government. The situation is further aggravated by the demands of groups, often well meaning, who see in the Federal treasury an abundant source of funds with which to carry through their particular endeavors. The evil becomes more apparent when we see Federal subsidies used as a club to compel the adoption by the states of certain procedures not acceptable to all of the states, at times contrary to their political and moral philosophies and even to their laws. At this time when our security is gravely threatened from without, the utmost economy is demanded in non-defense expenditures. The states and localities should strive to assume a greater share of responsibility for the health of their people. We believe that the continued increase of Federal subsidy defeats this purpose and establishes

and furthers a vicious spiral leading to higher Federal taxation, further depression of state and local resources, further depletion of private contributions, and then finally to greater Federal subsidy. This spiral of events must result in a progressive increase of Federal power, and finally in the complete breakdown of state, local and individual responsibility.

3. The administrative features of most bills before the Congress from year to year, affecting medicine and public health, are objectionable. The American Medical Association is opposed to any bill carrying a Federal subsidy in the field of medicine which does not in the body of the bill define and limit the powers of the administrator and does not completely safeguard medical schools, hospitals, public health activities and other medical services and facilities, together with the individual practitioner and patient, from encroachment of Federal power. As now practiced, Federal control to a greater or lesser degree follows the distribution of Federal subsidy. Since these funds are appropriated from the national treasury, some form of administrative control must be set up. This need not of necessity take the stereotyped form found in practically all medical bills introduced into the Congress. The usual procedure is to state the purpose of a bill and sketch its outline in broad and general terms. A federal agency is then designated to administer the Act and the head of that agency becomes the administrator. He is granted the power to make such regulations as he deems necessary to carry out the purpose of the Act. These loosely drawn bills leave to the judgment and discretion of the administrator extensive law-making powers. We see no profit but great danger in pouring funds into the national treasury, a fraction of which is handed back to the states encumbered by regulations which may be colored by the political or ideological persuasion of the administrator. Federal control of grants-in-aid and subsidies should be limited to a proper audit to give assurance that such funds are being administered honestly and in accordance with the purpose of the Act. Only a small fraction and not more than 3 per cent of any grants to states should be expendable on the Federal level. If difference of interpretation should arise between state and Federal administrations an appeal to an appropriate court should be provided and the two parties involved should appear on an equal footing before the Court.

4. The American Medical Association has long and vigorously supported the extension of public health services to the end that all areas may eventually gain the benefit of the best to be offered by an adequate and proper public health service. We are not, however, committed to any formula that will deprive the states and localities of their independence or bring them under the direction or control of the Federal Public Health Service or any Federal agency. We are satisfied that a proper redistribution of our tax contributions can be accomplished without interfering with state and local control. Even if a Federal administrator is most benevolent he is not necessarily all wise. The creation of a single pattern in all the states is objectionable, since we would lose the advantage of the thinking of many able men and the results of their experimental approach. Developments in states and localities may proceed along different lines and the experience thus gained will profit all of us. If the pattern of procedure is fixed by a Federal administrator there will be little possibility of erasing errors or of retreating from a position once taken.

The betterment of public health requires the orderly development and extension of both personal medical care and of preventive and environmental medicine. There are many convincing reasons why a line of demarkation should be maintained between these two great branches. There are borderline zones, however, and these need to be explored and clarified by friendly discussion.

5. We believe that the intrusion of the Federal government into the field of education carries with it grave dangers. We doubt if it is possible to write an Act, subsidizing a school system hedged about so effectively with safeguards that these cannot be eventually broken down or evaded by an astute administrator. We believe that the possibilities of obtaining sufficient financial support for medical schools from state, local and private sources has not yet been exhausted. We further believe that the development of this aid is one of the greatest and most important responsibilities of the individual doctor and of organized medicine today.

6. We believe that our greatest efforts should now be directed to the extension of the principles of voluntary prepayment of medical costs. The subscriber coverage of non-profit and private organizations has been increasing rapidly. This coverage needs to be extended further both as to quantity and quality. The part the American Medical Association can play in this program lies in the education of the health professions and the public, in providing technical aid, in developing plans in uncovered areas, and in detailed study of the experience of various areas so as to accumulate a large fund of actuarial data. On the basis of such data further advice can be given on how best to extend the coverage and benefits of the various plans.

Certain principles should guide us in our thinking on medical care and methods of prepayment of its cost. We are opposed to any all inclusive system of medical care that does not require a direct contribution on the part of the recipient. The full sweep of such a medical service is outlined in the National Health Service Act of Great Britain and the effect of this system on the medical profession and on the quality and distribution of medical care received by the people is a matter of record.

Any system of medicine that offers complete coverage and relieves the recipient of making any direct contribution for his own medical care will lower his sense of responsibility for his own health and that of his family, and will eventually depreciate the quality of medical service he receives. Such a system is inherently wasteful. The temptation to abuse it is constantly present. It offers endless opportunities for "chiseling" on the part of both dispenser and receiver and tends to the corruption of both. The cost becomes unsupportable. Efforts toward economy always result in curtailment of the essential as well as the nonessential services. When the inevitable financial breakdown occurs, the answer is always the same: Closer supervision and tighter regulations necessitated by economic rather than professional considerations.

7. The demand is repeatedly being made that an overall plan of medical care for the American people be formulated. Nothing could be more unwise than to attempt this, whether the plan be designed by the American Medical Association or the Federal government. The strength of this country has come from the political autonomy of the states and localities and the freedom of our people to experiment along various lines. In a country as vast as ours with its diverse political beliefs, social standards, economic needs and population density, an overall plan can only be made effective by a degree of regulation and compulsion that would crush out our initiative. We have advanced because we have been free to experiment, to try new ways and to develop this or discard that on the basis of results. One of the main compelling objections to many worthwhile proposals in the Congress pertaining to medical affairs has been the attempt through administrative provisions to establish a pattern to which all states must conform if they are to obtain their share of Federal grants.

8. A clear concept of the separate but cooperative functions of the physician and the hospital should be accepted and this concept should be the basis of friendly negotiations on points of difference. The practice of medicine is the prerogative and responsibility of the physician, and cannot be alienated without eventual injury to the quality of medical care provided.

9. The development of individual and community interest and responsibility should be encouraged and stimulated in every way with the purpose of providing good medical care on the local level and of financing medical services as far as possible by private contributions and local taxation. Through the development of local facilities home town care of such quality should be provided as will not necessitate the transportation of patients to larger centers except when their medical needs require facilities not properly available in their own community. As our civilian hospital system is developed it should be coordinated in such a way as to make these services generally available. With this development should go an extension of medical education from teaching centers throughout the coordinated hospital system so as to bring the best of modern medicine to every area.

Respectfully submitted,

Walter B. Martin
Edwin S. Hamilton
Leonard W. Larson

Report on Matters Referred by House of Delegates

Deferment of Students: The Reference Committee on Military Medical Affairs in its report to the House of Delegates at the Los Angeles Session recommended that the Board of Trustees and the Council on National Emergency Medical Service make recommendations to the appropriate government agencies strongly supporting "the continuation of the policy of deferment of properly qualified pre-professional and professional students of medicine, dentistry and veterinary medicine." The Board wishes to report that on four occasions since August 1951 statements have been made regarding the deferment of properly qualified pre-professional and professional students of medicine before the National Security Training Commission, which was set up to study ways and means of effectuating Universal Military Training and to report back to the Congress and the Committee on Armed Services of both the Senate and the House of Representatives.

Resolution on Deferment of Chiropractic Students: A resolution providing that the American Medical Association should "protest against the promulgation of any regulation by the Selective Service System under which students of chiropractic may be deferred under the Universal Military Training and Service Act" was adopted at the Los Angeles Session. The Board of Trustees has considered this resolution and believes it will be impossible to carry out the recommendation inasmuch as a regulation of the type contemplated by the resolution has already been promulgated by the Selective Service System. The regulation was issued in September following the enactment of Public Law 51, 82d Congress, which specifically authorized the deferment of chiropractic students. In view of the wording of existing law, it would appear that the Selective Service System had no other alternative than to issue such a regulation. It is doubtful whether the existing law can be amended.

Proposal to Reactivate Fellowship Classification to Provide Recognition for Contributors to American Medical Education Foundation: The Board of Trustees gave consideration to that portion of the report of the Reference Committee on Medical Education and Hospitals, adopted at the December Session of the House, which recommended that the Board explore the feasibility of reactivating the Fellowship status in recognition of those doctors who annually contribute as liberally as they can to the American Medical Education Foundation. It is the consensus of the Board of Trustees that to revivify the Fellowship classification would further complicate the situation which now obtains with respect to membership and dues. The report of the reference committee, however, has been referred to the American Medical Education Foundation with the recommendation that, if feasible, a system of contributing membership be established in the Foundation.

Tax Deductions for Postgraduate Study

Both the House of Delegates and the Board of Trustees have been much interested during the past several years in obtaining income tax exemption for funds spent in pursuing postgraduate study. No decision favorable to the individual undergoing this training could be obtained from the Commissioner of Internal Revenue, as he held to his old ruling that expenses incurred for this purpose were not deductible. Under Docket No. 26249, George O. Coughlin, a lawyer, filed a claim in the tax bureau of the United States against the Commissioner of Internal Revenue to allow him this deduction. As this case parallels the case of medical postgraduate education, the Association has filed a brief as *amicus curiae* and has obtained the services of an experienced tax lawyer in Washington as counsel.

Report of Committee on Legislation

The Committee on Legislation is grieved to report the death of its Vice Chairman, Dr. Oscar B. Hunter, Washington, D. C., on December 19, 1951. Dr. Hunter was a member of the committee since its activation in January 1950, during which period he gave freely and unselfishly of his time despite his numerous other medical commitments, one of the most important of which was that of Vice President of the American Medical Association.

At the meeting of the committee on December 4, 1951, Dr. Dwight H. Murray, chairman, submitted his resignation because of his election and duties as Chairman of the Board of Trustees. Dr. F. J. L. Blasingame of Wharton, Texas, was unanimously elected chairman, and Dr. Joseph D. McCarthy of Omaha, Nebraska, was elected vice chairman at the December 4 meeting. In addition, the Board of Trustees appointed the following new members to the committee: Dr. Walter B. Martin, Norfolk, Va., Dr. J. Lafe Ludwig, Los Angeles, and Dr. Clark Bailey, Harlan, Ky.

During the period covered by this report, October 1, 1951 to April 15, 1952, the committee has had two meetings, has analyzed seventy-six legislative proposals and has recommended policy positions on fifty-four of these proposals to the Board of Trustees. The following is a list of the measures on which either oral or written statements were presented, together with the names of the witnesses and a brief resumé of each proposal.

82D CONGRESS

S. 1140:

Dr. Walter B. Martin testified before the Senate Committee on Expenditures in the Executive Departments in opposition to this bill on March 3, 1952. The bill proposes the establishment of a new executive agency with cabinet rank to be known as the Department of Health, in which hospital, medical and public health functions of the government would be consolidated.

In stating the opposition of the American Medical Association to this bill, Dr. Martin pointed out that certain of the recommendations of the Hoover Commission, which were presented in 1949, were not applicable today, due in part to the hostilities in Korea and to the threat of war in various other parts of the world. It was also indicated that although the Hoover Commission report did recommend, in part, the program proposed by S. 1140, the bill would not accomplish the basic or primary recommendations of the Commission, which were (a) that the Congress clearly define the beneficiaries entitled to medical care from the Federal Government and the relative priorities of such beneficiaries, and (b) that the present inconsistencies in the federal hospital programs be resolved.

S. 1245 and S. 2337:

Dr. Edwin S. Hamilton and Dr. Woodruff L. Crawford testified before the Health Subcommittee of the Senate Committee on Labor and Public Welfare in opposition to these bills on March 12, 1952. The bills would establish an Emergency Maternity and Infant Care Program for wives and children under five years of age of enlisted personnel of the Armed Forces. In addition, S. 2337 would establish a program of hospital care for any dependent of enlisted personnel of the Armed Forces. These programs would be financed by the Federal Government and the states on a fifty fifty basis.

The opposition of the Association to these bills was based in a large measure on surveys conducted by the Council on Medical Service which indicated no evidence of a widespread need that would warrant the creation of a federal program. A more recent survey conducted by the Research Department of the Welfare Council of Metropolitan Los Angeles indicates clearly that the medical needs of servicemen's families in the Los Angeles area are being taken care of adequately.

S. 2441 and H. R. 5904:

Dr. F. J. L. Blasingame testified before the Committee on Armed Services of the Senate and House of Representatives on these bills on February 11 and January 29, 1952, respectively. These measures, which are identical, embody the recommendations of the National Security Training Commission as to the framework and administration of a Universal Military Training program. Briefly the bill would provide six months of basic military training for all males on reaching the age of 18 years, followed thereafter by seven and one-half years of reserve obligation.

Although the Association did not take a position for or against these measures, several recommendations were made with respect to the medical implications of the proposals. The three principal items on which comment was made were: (1) The continuation, without interruption, of pre-professional and professional education for qualified students; (2) Personnel to perform pre-induction, induction and periodic reserve physical examinations, and (3) The choice and selection of medical and allied professional personnel to administer a Universal Military Training Program.

Fluoridation of Public Water Supplies:

A written statement was presented on February 27, 1952, signed by Dr. George F. Lull, Secretary and General Manager of the Association, to the Select Committee of the House of Representatives to investigate the use of chemicals with special reference to the fluoridation of drinking water.

Based on a statement by the Council on Pharmacy and Chemistry, the Association endorsed the basic principle and advised the committee that fluoridation of public water supplies, in a concentration not exceeding one part per million, is nontoxic.

LEGISLATIVE REVIEW

Another activity of the Committee on Legislation, inaugurated recently, is the preparation and distribution of the "Legislative Review" by the secretary. The Review analyzes in simple terms national legislation with medical implications and indicates the past positions taken by the committee, the Board of Trustees and the House of Delegates with respect to similar or identical proposals.

DR. OSCAR B. HUNTER

On December 19, 1951, barely two weeks after he had attended the Clinical Session at Los Angeles in his official capacity as Vice President of the American Medical Association, Dr. Oscar B. Hunter of Washington, D. C., died. Dr. Hunter was extremely active in the affairs of organized medicine for many years and served the American Medical Association long and well in a number of official capacities. As Vice President since the Atlantic City Session in June 1951, he attended meetings of the Board of Trustees, and his wise counsel at various times was greatly appreciated by the members of the Board. Dr. Hunter's personal charm, good humor and deep humanity were always apparent. The American Medical Association and American Medicine generally has lost a good and faithful servant.

INVITATION FOR 1955 ANNUAL SESSION

At the time of preparation of this report, an invitation to hold the 1955 Annual Session has been received from Atlantic City only. A study has been made of the facilities available for accommodating the Annual Session in Atlantic City, and they have been found to be adequate.

CONCLUSION

It is probable that a supplementary report will be submitted when the House of Delegates convenes in Chicago.

Respectfully submitted,

DWIGHT H. MURRAY, Chairman.
GUNNAR GUNDERSEN, Vice Chairman.
EDWIN S. HAMILTON, Secretary.
EDWARD J. MCCORMICK.
DAVID B. ALLMAN.
F. J. L. BLASINGAME.
LEONARD W. LARSON.
THOMAS P. MURDOCK.
WALTER B. MARTIN.
JOHN W. CLINE.
LOUIS H. BAUER.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

At the request of Dr. C. F. Strosnider, Chairman, Dr. Hoyt B. Woolley, member of the reference committee, presented the following report, which was adopted:

DEFERMENT OF STUDENTS

Your reference committee notes with satisfaction the action taken by the Board of Trustees on deferment of students. Your committee recommends progress report to the House at its next meeting.

RESOLUTION ON DEFERMENT OF CHIROPRACTIC STUDENTS

As noted in the report, this subject has already been properly taken care of by the Selective Service System.

PROPOSAL FOR REACTIVATION OF FELLOWSHIP

Your committee is in agreement with the Board of Trustees that revival of the Fellowship classification would further complicate the membership, which is at present becoming clarified.

FINANCIAL STATEMENT

Your committee notes with satisfaction the increase in paid dues in 1951 over 1950 and the additional amount of 1950 dues paid in 1951, amounting to $332,724. Your committee notes that the additional $405,498 spent by various Councils and Bureaus was due to the wide expansion of their programs. Your committee further notes the decrease of $2,000,000 expenditure in the National Education Campaign over 1950. It is further noted by your committee that the Association will have a decrease in revenue of approximately $250,000 from discontinuance of the Fellowship classification.

TREASURER'S REPORT

We note that the financial statement has been properly audited and conforms with generally accepted accounting principles as to income and disbursements.

Resolution on Death of Dr. Herman L. Kretschmer

The Speaker recognized Dr. Charles H. Phifer, Illinois, for the presentation of a memorial to a Past President, which was adopted at the request of the Speaker without motion, as follows:

The many presidents of the American Medical Association have each reflected great credit on the organization. Among this group is Dr. Herman L. Kretschmer, who passed away Sept. 23, 1951.

Dr. Kretschmer served the American Medical Association as Treasurer for many years and then as President. In each of these responsible positions he reflected great credit on the organization. He was a true gentleman, a great scholar, a renowned physician, a distinguished urologist and clinician, a noted teacher, a great administrator, a celebrated editor, a man greatly beloved by all the profession and the public. His contributions to medicine, literature and education are outstanding.

He had a very high appreciation of the duties and responsibility of every citizen.

The high esteem in which he was held by the members of the medical profession is evidenced by the fact that he was president of the American Urological Association, the American Association of Genito-Urinary Surgeons, the Clinical Society of Genito-Urinary Surgeons, the Interstate Postgraduate Association of North America, the Institute of Medicine of Chicago, and the American Medical Association.

Dr. Kretschmer fulfilled the definition of a physician as expressed in the words of Robert Louis Stevenson:

> "There are men and classes of men
> that stand above the common herd;
> the soldier, the sailor and
> the shepherd not infrequently;
> the artist rarely; rarelier still,
> the clergyman; the physician
> almost as a rule. He is the flower
> (such as it is) of our civilization."

The Illinois delegation deeply laments the death of Dr. Kretschmer. We, however, rejoice in the fact that we were privileged to enjoy his friendship, advice, and constructive guidance for many years; therefore, be it

Resolved, That the House of Delegates of the American Medical Association at its 101st Annual Session, June 9-13, 1952, expresses its feeling of great loss in the death of Dr. Herman L. Kretschmer; and be it further

Resolved, That a copy of these resolutions be forwarded to the members of his family, and a copy spread on the minutes of this session.

Supplementary Report of Board of Trustees

Dr. Dwight H. Murray, Chairman, presented the following supplementary report of the Board of Trustees:

INTRODUCTORY REMARKS

Many important problems were presented to the Board of Trustees during the past year. Some of these are not new but have been brought to the front by the activities of outside agencies. This situation has created tremendous demands on the time of the members of the Board and the officers of the Association, resulting in an extension of the length of each meeting of the Board to approximately two and one half days. The Executive Committee during the past year has met almost every month in order to keep in close touch with the headquarters office. The usual stated meetings of the Board were held last year, as well as a special one occasioned by the fast-moving legislative situation.

As Chairman of the Board I want to take this opportunity to express publicly my appreciation to the members of the Board who have given so much of their time to the affairs of the Association.

I feel that the public and, in fact, a large segment of the profession are not cognizant of the amount of time and effort spent by the officers of the Association in pursuit of their official duties. As an example of this, the United Air Lines, San Francisco office, states that your President, during the past year, has had more transportation arranged on its lines than any other individual in the history of the company. He has been in practically every state of the Union at least once and has appeared before 36 state or large county organizations.

COORDINATION BETWEEN THE FEDERAL CIVIL DEFENSE ADMINISTRATION AND MILITARY ORGANIZATIONS

With respect to the action taken by the House of Delegates in adopting the recommendation of the Reference Committee on Medical Military Affairs that representations be made by the Council on National Emergency Medical Service and the Board to appropriate agencies of the government for closer participation on the part of the military services in civil defense planning, the Board of Trustees wishes to report that the Council has in the past and is still maintaining active liaison with the Federal Civil Defense Administration and the Department of Defense. Effectuation of the policy recommended in December, 1951, by the reference committee is a continuing activity of the Council. Since that time the Department of Defense, the Federal Civil Defense Administration, and the National Security Resources Board have contracted for a joint study with the Associated Universities, Inc. One of the purposes of this study is to provide closer coordination between federal agencies interested in civil defense activities.

The following executive order, dated April 17, 1952, has also been promulgated with this in mind:

Executive Order 10346
Preparation by Federal Agencies
of Civil Defense Emergency
Plans

"By virtue of the authority vested in me by the Federal Civil Defense Act of 1950, approved Jan. 12, 1951 (Public Law 920, 81st Congress), and as President of the United States and Commander in Chief of the Armed Forces of the United States, it is hereby ordered as follows:

"Section 1. In furtherance of national planning for the utilization of the personnel, materials, facilities and services of the federal departments and agencies which will be required in the event of a civil-defense emergency, each federal department and agency shall, in consultation with the Federal Civil Defense Administration, prepare plans for providing its personnel, materials, facilities and services pursuant to the provisions of section 302 of the said Federal Civil Defense Act during the existence of a civil-defense emergency. The plans of each department and agency shall take into consideration the essential military requirements of the Department of Defense with respect to such department or agency.

"Section 2. In addition to the plans required by section 1 hereof, each federal department and agency shall prepare plans for maintaining the continuity of its essential functions at the seat of government and elsewhere during the existence of a civil-defense emergency. The personnel, materials and facilities required for this purpose shall be exclusive of the personnel, materials and facilities required for the execution of the plans prepared pursuant to section 1 of this order. In the preparation of the continuity plans required by this section, each department and agency shall consult with the Federal Civil Defense Administration with respect to the civil-defense aspects of its functions. In order to achieve uniformity of planning for the continuity of essential functions, the National Security Resources Board shall establish such standards and policies as it may from time to time deem desirable. That portion of the continuity plans of a department or agency which involves its functions at the seat of government shall become effective upon approval by the President, and that portion, if any, which involves functions performed elsewhere shall become effective upon approval by the head of the department or agency concerned.

"Section 3. The Federal Civil Defense Administrator shall assist the departments and agencies by indicating the types of personnel, materials, facilities and services considered useful for civil-defense purposes in time of emergency; arrange for the use of such personnel, materials, facilities and services as are not required for maintaining the continuity of the essential functions of the departments and agencies; and coordinate such arrangements with national, state and local civil-defense plans."

HONORARIA FOR PRESIDENT AND PRESIDENT-ELECT

Considerable thought was given by the Board of Trustees to the report of the Reference Committee on Miscellaneous Business, to which were referred the two resolutions on honoraria for the President and President-Elect. After reviewing all of the ramifications of the problem, the Board voted to authorize an honorarium of $50 a day for the President and President-Elect for every day they are away from their homes on official American Medical Association business, in addition to the regular per diem and travel allowance which they are now receiving. This action is to be retroactive to June 15, 1951 in the case of the President, Dr. Cline, and the President-Elect, Dr. Bauer.

ADVISORY COMMITTEE TO BOARD OF TRUSTEES

In June, 1951, the Board of Trustees announced to the House of Delegates that it planned to appoint an advisory committee of distinguished individuals from nonmedical fields. The Board has given careful consideration to this program and believes the way to implement this plan would be to call on qualified persons outside the profession for counsel whenever such advice would seem helpful. The personnel of this committee will vary with the problem under consideration. The names of those consulted will not be publicized in order to protect them from any undue pressure and publicity. The obtaining of advice from outstanding nonmedical individuals in the United States will provide additional information to the Board in its consideration of the many problems it faces.

ADVISORY COMMITTEE ON POLICY

In accordance with the action taken by the House of Delegates at its meeting in June, 1950, the Board of Trustees appointed a committee of three to study the Twelve Point Program of the American Medical Association with the idea of making any changes that seemed to be indicated.

The specific purpose for which this committee was appointed has been accomplished in that a report on the Twelve Point Program was submitted to the Board at its last meeting and appears in the Handbook (see THE JOURNAL, page 858). The Board, therefore, in order further to comply with the recommendation of the House that the committee be a continuing one to advise the Association from time to time concerning appropriate changes in the policy which might be made advisable by altered circumstances, recommends at this time that the present committee be reconstituted as a committee of five, to be appointed by the Board, for the purpose mentioned above but composed of past presidents of the Association or former members of the Board of Trustees, the committee to be known as the Advisory Committee on Policy.

Washington Property

At the December, 1951, meeting of the House of Delegates, Dr. S. E. Gavin introduced a resolution relative to the purchase of property in Washington for a permanent home for the Washington Office. This was referred to the Board of Trustees by the Reference Committee on Miscellaneous Business, with a directive to consider the purchase of suitable property in Washington at an opportune time. The Board has investigated property in Washington, and, in fact, obtained an option on one piece of property. The option was allowed to lapse, however, because the property was considered not to be of the exact nature required. The Board will continue to investigate this matter.

Joint Statement of Principles Relating to Local Community Planning for Health with Particular Reference to Local Health Councils

In accordance with action taken by the House of Delegates in June, 1951, suggesting that the Board of Trustees continue its activities with the Inter-Association Committee on Health, the Board has worked closely with that committee and is submitting at this time a joint statement of principles relating to local community planning for health, with particular reference to local health councils, for such action as the House deems necessary and advisable.

JOINT STATEMENT OF PRINCIPLES

Although the origins of community planning for health cannot be clearly identified, the current trend in planning and coordination of health effort on a community-wide basis began to take form in the decade marked by the first World War.

As of September, 1950, 1,224 such community health planning bodies were known to be operating in various parts of the United States and its territories. These bodies whether they be called "health committees," "health federations," "health divisions of councils of social agencies," "citizen planning committees," or simply "community health councils," have demonstrated that they are effective instruments for improving community health.

Today, old councils are being revived and reorganized and new ones are being formed at an ever accelerated rate, as can be seen from the fact that more than one fourth of the 1,190 local councils which were in existence in 1950 were organized in the preceding two years.

They do not need pressure from higher organizational levels but guidance, encouragement, and assistance from all sources so that they may better meet the needs and conditions within their own communities.

As a means of furthering this community effort, the Inter-Association Committee on Health of the six national associations of professional health and welfare workers adopt the following principles relating to "local community plannnig for health."

I. Basic Premises Underlying Planning for Health.

(1) Health may be defined as a state of optimal physical, mental and social well-being—not merely the absence of disease or infirmity.

(2) Achievement of health is primarily a personal responsibility but is also closely related to the family's and the community's way of life.

(3) The initiative and interest of the individual in his own health is essential to the effective furtherance of the health of the community. The effective furtherance of community health is also dependent upon the initiative, interest, aggressive support, and participation of individuals and groups in the entire community—professional workers in the field of health, and laymen.

(4) Community planning for health should be coordinated with planning for economic and social well-being. Uncoordinated planning leads to and perpetuates an unrealistic separation of services.

(5) An effective instrument for implementing community planning for health is the "health council," which may be defined as: "A voluntary association of individuals and organizations, representative of the entire community, which concerns itself with the joint evaluation of health needs and the planning and coordination of health services so as to bring about more effective utilization of health resources."

II. Basic Principles of Organization and Operation of Health Councils.

(1) The person or organization taking the initiative in organizing a health council is less important than the motives for which a health council is organized. A health council is a community wide project and is not to serve the selfish motives of any particular agency or group, nor can it afford to be dominated by any person, agency or group.

(2) No one organizational form applies equally to all health councils; each will have to grow in a manner which best fits the needs of its own particular community.

(3) Since a community health council is a planning body, it may effectively represent any "natural community," rural or urban, and need not coincide with county lines or with the corporate limits of a city or town.

(4) The support of the medical profession is essential to the success of any community health program. However, since a health council is a community wide project, its membership should, as far as possible, represent all community interests.

(5) The degree of its success depends upon the extent to which all community interests, lay as well as professional, learn to work together for the public good.

(6) Continuity and permanency are essential if a health council is to be an effective planning body regardless of its organizational form.

(7) In any program of planning or coordination thorough knowledge of the community's health problems and resources is essential.

(8) Successful health councils require continuous financial support. It is best for them to be financed by contributions from within their own community, and from sources which will not tend to limit their freedom of thought and action.

III. Major Recommendations.

The Inter-Association Committee on Health urges:

(1) The early formation of local health councils where they do not now exist and the strengthening of existing local health councils so as to make them more effective ininstruments for community health planning.

(2) That citizens, both as individuals and as representatives of lay organizations, participate in community planning for health in order that they may assume their proper role of leadership in meeting their own health needs.

(3) That physicians, dentists, nurses, hospital administrators, and public health and public welfare workers cooperate with and participate in efforts to further local community planning for health.

1953 Dues of Association

The Board of Trustees recommends that the dues of active members of the American Medical Association be $25 for 1953. Membership dues include subscription to The Journal of the American Medical Association unless a member requests another scientific journal published by the Association in lieu of The Journal.

Place of 1955 Clinical Session

The Board of Trustees has given careful consideration to the invitations received for the 1955 Clinical Session of the Association and wishes to report that Boston has been selected as the place for that meeting. A report will be made at a later time as to the dates selected for the Session.

Uniform Types of Membership

At the present time there is a wide difference in the types of membership held by individuals in the various constituent associations. Some have only one class of membership; others have as high as nine. This not only has led to confusion but, in some instances, deprives individuals of the right to hold full membership in the American Medical Association because of the situation in their local and state societies.

The Board of Trustees brings this matter to the attention of the House and suggests that it be authorized to appoint a committee to study this subject and set forth suggestions as to how such uniformity can be accomplished which, in turn, if approved, can be transmitted to the various state organizations.

Health Home Council

The Joint Committee on Rehabilitation of the Council on Industrial Health and the Council on Physical Medicine and Rehabilitation is concerned with employment opportunities for the handicapped and has been approached by the Edison Electric Institute and the National Electrical Manufacturers Association to explore with them the desirability of setting up a Health Home Council under qualified medical guidance. The intent of this Health Home Council would be to promote research and the spread of authentic information to the public, to industry and to professional groups concerning work simplification and energy-saving devices for housewives with cardiac, tuberculous, or other severely disabling diseases since home making is an occupation which has preeminent importance as a factor in community health, industrial production, and family welfare.

In view of these facts, the Board of Trustees requests approval by the House of Delegates of the principle of this proposal so that the Joint Committee of the two Councils may investigate this activity and make specific recommendations to the Board of Trustees and the House of Delegates at its earliest opportunity.

Resolution from Council on National Emergency Medical Service on Authority of Federal Civil Defense Administration

Whereas, The Congress through the enactment of the Federal Civil Defense Act of 1950 created a new executive department known as the Federal Civil Defense Administration; and

Whereas, The Congress at the time of the passage of this act declared its intention to be that the primary responsibility for civil defense activities be vested in the several states and their political subdivisions; and

Whereas, Certain questions have arisen as to the extent of the authority to be exercised by the federal government in time of national emergency and the proper federal agency to administer the program authorized; therefore be it

Resolved, That the American Medical Association support the proposition that if and when enemy action or domestic disaster results in a situation sufficiently critical to require active relief measures under the authority vested by the Congress in the Federal Civil Defense Administration, such authoritative federal control shall be activated only in those areas in which the disaster has paralyzed the usual functions of local government and the normal civilian facilities for disaster relief; and be it further

Resolved, That the American Medical Association endorse the proposition that the responsibilities and authority of the Federal Civil Defense Administration for the health care of civilians in time of emergency shall continue until and only until such stricken areas have recovered sufficiently to resume their normal medical and health functions through self help and mutual aid together with the assistance of civilian relief agencies, support from the armed forces in the way of emergency issue of critical materials, and such other relief funds as the Congress may appropriate.

Resolution from Council on National Emergency Medical Service on Stockpiling of Medical Supplies by Federal Civil Defense Administration

Whereas, The existing critical emergency situation necessitates comprehensive health planning and the procurement of medical supplies and equipment for the care and treatment of civilian casualties in the event of enemy attack; and

Whereas, The Congress, through the enactment of the Federal Civil Defense Act of 1950, created a new executive department known as the Federal Civil Defense Administration with authority to formulate such plans and procure such equipment; therefore be it

Resolved, That the American Medical Association support the continuing stockpiling of critical and necessary medical supplies by the Federal Civil Defense Administration in sufficient quantities after proper identification and under conditions which will insure against their deterioration and spoilage with special consideration for the rotation of biologicals and other supplies with effectiveness of limited duration.

Development of Case Finding Methods

Dr. Sidney Shipman, president of the National Tuberculosis Association and chairman of the Council of the California Medical Association, presented a proposal to the Board of Trustees to encourage the development, in the offices of physicians, of case finding methods of a type even more effective than the valuable services now provided by voluntary health agencies and departments of public health in mass surveys. The purpose of this proposal is to elevate further the level of medical care rendered to the people of the United States. He sought approval of this program, in principle, by the Board of Trustees and the appointment, by the Board, of a committee of the American Medical Association to examine ways and means of accomplishing these ends.

The Board of Trustees approves the principle of this proposal and asks the House of Delegates to concur in this approval and to authorize local and state-wide experiments as pilot studies to implement this program.

General Practitioner's Award

After giving the matter careful consideration, the Board of Trustees invites the attention of the House of Delegates to the resolution on the method of selecting each year the outstanding general practitioner by the American Medical Association, which was adopted in June, 1948, and recommends an amendment of the procedure specified in the resolution, by eliminating the following provision:

"(5) The Board of Trustees shall select from the names submitted by state societies the names of three persons, these names to be submitted in turn to this House of Delegates, which shall select one name to be declared the outstanding general practitioner of the United States for the year."

The Boards feels that an amendment to the resolution would free the House of the responsibility of electing for the award a person most of the delegates do not know and would comply with objections heard from many sources.

It is believed that a much more dignified and fair approach would be to have the Chairman of the Board appoint an impartial committee, to remain anonymous until after the award is made, which would study the credentials and choose from the nominations submitted the general practitioner most qualified for the honor.

The Board of Trustees requests the opinion of the House of Delegates as to whether the above-mentioned plan would be a better procedure in selecting the recipient of the General Practitioner's Medal than the one now in effect. If the House concurs in the suggestion of the Board, the date on which all nominations must be received by the headquarters office will be published in The Journal following this Annual Session.

Committee on Legislation and S. 1140

I should like to call your attention to the report of the Committee on Legislation, which appears in the Handbook (see The Journal page 860). This committee has provided invaluable advice and guidance to the Board of Trustees in connection with legislative problems. It deserves special commendation for its efficient method of action and its careful analysis and report of bills with medical implications.

For nearly all the past year it has been necessary to spend a substantial amount of time, effort, and money in correcting and explaining the misrepresentations which have been made by the National Doctors Committee for Improved Federal Medical Services under the chairmanship of Dr. Robert C. Page. Most recently that committee has communicated with a number of physicians, recommending the adoption by state medical societies of a resolution which contains a paragraph asking "the American Medical Association to formulate amendments to the bill S. 1140, 82d Congress, which would meet the Association's objections, or suggest such compromises as will clear the way for the adoption of the admittedly needed reorganization of federal medicine."

This latest communication of the National Doctors Committee is another attempt to confuse and divide the profession with respect to legislative recommendations for consolidation of health services.

A full report has been prepared by the Board of Trustees and distributed to the members of the House of Delegates, reviewing the actions taken by the American Medical Association concerning this matter and stating again the official position of the Association.

In briefly summarizing this report, the Board of Trustees would like to state that whatever policy the House of Delegates may adopt in the future with respect to the inclusion of the hospitals of the Armed Services and the Department of Medicine and Surgery of the Veterans Administration in a federal Department of Health, the position of the American Medical Association today is crystal clear and has been for years.

It opposes the transfer of the hospital system of the armed services and the Veterans Administration to a federal Department of Health and it therefore cannot endorse any bill proposing such a consolidation.

It is the belief of the American Medical Association that the best way to institute governmental economy in the use of funds and medical manpower is:

(*a*) To obtain a clear congressional definition of the extent of the government's responsibility for furnishing medical care with particular reference to the treatment of veterans with non-service-connected disabilities and the dependents of service personnel; and

(*b*) To establish a federal board to control the distribution of beds among the several federal hospital services, to insure joint planning in the field of hospital construction and to determine the need and location of proposed new hospitals in the United States.

Licensure or Certification of Clinical Psychologists

At the San Francisco meeting in June, 1950, the Section on Nervous and Mental Diseases authorized the appointment of a committee to study the advisability of establishing some medical viewpoint concerning the licensure or certification of clinical psychologists. Dr. Francis J. Gerty of Chicago was named chairman of this committee, with Dr. R. P. Mackay of Chicago and Mr. J. W. Holloway Jr. of the Bureau of Legal Medicine and Legislation as members. The committee submitted a report to the Section at the Atlantic City meeting in 1951, which was subsequently published in The Journal of the American Medical Association for Jan. 26, 1952, pages 271-273.

The committee proposed the following recommendations:

1. Certification of clinical psychologists is recommended at this time.

2. Licensure of clinical psychologists is not recommended at this time.

3. Private practice of psychotherapy by psychologists should be under psychiatric supervision.

4. It is suggested that the Section on Nervous and Mental Diseases request the Bureau of Legal Medicine and Legislation of the American Medical Association to make a study of the medical practice acts of all states to determine if statutes now in force specify either (*a*) that psychotherapy is within the medical province, or (*b*) that physical treatments only are within the medical province, or (*c*) that nothing definite appears with reference to these two possibilities. In case conditions (*b*) or (*c*) apply, some steps should be taken to amend existing medical practice acts to include the categories of mental therapy for which techniques have been developed within the field of psychiatry. This suggestion is made because of the fact that medical practice acts have had an uneven and irregular growth. They do not always include in their provisions recognition of important elements in medical principle and tradition. They may be expected to lag in the recognition which they accord to advancing medical knowledge which is of importance in connection with the treatment of human ills. In some measure this has been the case with psychiatry and the principles on which psychotherapy rests.

5. The five state statutes concerning licensure or certification of clinical psychologists which are now in force should be studied and tested specifically to determine how well their provisions accord with the principles which have been expressed in this report. The practice of psychologists under the terms of these statutes should be observed carefully. If the study of these statutes or facts brought out by the tests of trial justify such action, steps should be taken to amend these statutes to correspond with the principles which have been stated here.

6. All proposed acts for the certification or licensure of psychologists which may be proposed in the future should be (*a*) carefully studied by the Bureau of Legal Medicine and Legislation to determine if they are in accord with the principles and recommendations here expressed, and (*b*) compared with the medical practice acts of the states in which they are proposed to determine if there can be better over-all coordination between the separate acts which apply in the same areas of practice.

The Board of Trustees suggests that the House of Delegates concur in the recommendations of the committee from the Section on Nervous and Mental Diseases so that further study may be given to this subject.

H. R. 7800

Information was received by the Board of Trustees to the effect that H. R. 7800, 82d Congress, a bill to amend the Social Security Act, is again to be considered by the House of Representatives this week. This measure was originally referred to the House Committee on Ways and Means, reported favorably by the committee without public hearings, with the request that action be taken under suspension of the rules, and was defeated because of the Association's quick action in uncovering a section in the bill which, if enacted, would have opened the door to socialized medicine.

Because fast action was deemed necessary at this time, the Board on June 7 authorized that the following telegram be sent to all members of the House of Representatives:

> The American Medical Association strongly urges deletion of Section 3 from H. R. 7800 for the reasons stated in the telegram previously transmitted. The American Medical Association has taken no action with reference to other sections of this bill which it does not consider within its purview.

The Board now asks confirmation by the House of Delegates of its action with respect to H. R. 7800.

In order that the House may be fully informed of the facts in the case, the Board has authorized that the following statement be read:

H. R. 7800 (a bill to amend the Social Security Act) was introduced on Monday, May 12, 1952, by Congressman Doughton (D., N. C.) and was referred to the House Committee on Ways and Means. Printed copies of the bill were not available until Wednesday, May 14. The committee considered the bill immediately and reported it favorably on Friday, May 16, without public hearings and with the request that action be taken on Monday, May 19, under suspension of the rules. All of this transpired in only one week's time.

The measure came to the House floor with a request for a suspension of the rules which limited debate to 40 minutes and prohibited amendments to the bill. A two-thirds majority vote is required for suspension of the rules. The vote was 150 for passage to 140 against.

The bill would have provided a variety of amendments to Title II of the Social Security Act, as amended, which deals with Old Age and Survivors' Insurance benefits. The American Medical Association did not concern itself with these provisions, since they did not fall within its province. It was concerned only with one section of the bill—Section 3. This section dealt with persons, covered by the provisions of the Old Age and Survivors' Insurance title of the Social Security Act, who became permanently and totally disabled.

The bill further provided that the Federal Security Administrator should (*a*) determine what constitutes permanent and total disability; (*b*) establish the types of proof necessary to prove permanent and total disability; (*c*) provide by regulation when and where physical examinations should be taken; (*d*) be authorized to prescribe the examining physician or agency (including federal installations); (*e*) establish the fees; (*f*) be authorized to pay travel expenses and subsistence incident to the taking of such physical examinations; and (*g*) have power to curtail Old Age and Survivors' Insurance benefits because of noncompliance with regulations of this section.

While the bill did not establish permanent and total disability benefits, it established a precedent and framework for the adoption of such benefits in the future.

In view of this dangerous precedent and the immediate control which Section 3 of the bill would vest in the Federal Security Administrator over a large segment of the population and the medical profession, the American Medical Association strongly opposed its adoption. The Association informed congressmen and key medical personnel why it was voicing its opposition to this section. In doing so, the Association was performing a public service.

In debating the bill on the House floor, Rep. Daniel A. Reed, senior Republican member of the House Ways and Means Committee, expressed the Association's sentiments when he said he did not object to the increase in the benefits. Neither did the Association. "This bill," he said, "opens the way for socialized medicine. If you vote for this bill you are voting for socialized medicine." Reed and several other congressmen who voiced objection on the floor of the House warned against the provision which proposed to give the Federal Security Administrator broad authority over determining disability payments. This was the very provision to which the Association objected.

A large number of congressmen, who opposed passage, were as much against the manner in which the measure was presented as they were against the substance of the questionable section. They felt that to introduce so important a bill and "railroad" it through committee without public hearings, and then to bring it up on the floor of the House under a suspension of the rules, was undemocratic and strictly a political maneuver to get it through. To "slip through" such a provision would have been a violation of public trust.

Immediately after defeat of the bill, Rep. Reed introduced a substitute bill eliminating the controversial section. In reference to the Reed bill, Charles J. Kersten (R., Wis.) declared on the House floor: "If the Fair Dealers prevent this Republican-sponsored bill from coming to the floor, they will be committing a fraud upon the aged and others who need these increases."

The administration has tried repeatedly to promote the passage of a compulsory health insurance bill and has failed completely. This bill, H. R. 7800, represents a last-minute, desperate attempt to circumvent the will of Congress and the people by a devious legislative maneuver.

Committee of the Whole

Dr. Joseph H. Howard, Connecticut, moved that the House resolve itself into a Committee of the Whole to discuss the report of the Board of Trustees on H. R. 7800 and to take definite action. The motion was seconded by Dr. Harlan English, Illinois, and carried, and the Speaker declared the House constituted as a Committee of the Whole and asked the Vice Chairman Pro Tem to serve as Chairman.

On motion of Dr. Walter E. Vest, West Virginia, seconded by Dr. Val H. Fuchs, Louisiana, and carried, the House rose from the Committee of the Whole, and the Chairman presented the following report, which was adopted unanimously:

Mr. Speaker, your Committee of the Whole reports that it believes that the report on H. R. 7800 as presented by the Chairman of the Board of Trustees should be adopted.

Supplementary Report of Board of Trustees (continued)

The Board of Trustees, at this point, requests permission for Dr. E. L. Henderson, Chairman of the Special Committee on Federal Medical Services, authorized in December 1951, to submit the report of that Committee to the House of Delegates.

REPORT OF SPECIAL COMMITTEE ON FEDERAL MEDICAL SERVICES

Dr. E. L. Henderson, Chairman, presented the following report:

The Special Committee on Federal Medical Services was appointed by the Board of Trustees in December, 1951, to study and report with respect to the following:

(*a*) Medical and hospital benefits for veterans with non-service-connected disabilities;

(*b*) Medical and hospital benefits for dependents of service personnel, and

(*c*) The transfer of seriously disabled service personnel from service hospitals to Veterans Administration installations.

It was apparent to the Committee from the outset that a survey of the magnitude encompassed by the mandate of the Board of Trustees could not be accomplished in less than one year. For that reason, this interim report is being submitted to acquaint the Board of Trustees and the House of Delegates with the activities of the Committee to date. A final report will be submitted at the time of the Clinical Session of the American Medical Association in December 1952.

Before proceeding to a discussion of the activities initiated thus far, the Committee wishes to emphasize the tremendous consequences of this study not only to the medical profession but to the nation as a whole. The Committee is, therefore, making every effort to see that the study receives the consideration and deliberation which a subject of its complexity and importance deserves. Research efforts will include a survey of the laws and their legislative history, as well as administrative regulations and procedures dealing with the above three subjects. It is also planned to compile all pertinent information, statistics, costs, trends, future plans, and related data incident to the subject of the Committee's inquiry. This information will be used as the basis for policy recommendations to the Board of Trustees and the House of Delegates of the Association.

Extensive research activities have been initiated and to date a considerable volume of background and statistical material has been received from government and private agencies, as well as from individuals interested in the Committee's field of operation.

In addition, a number of conferences have been held with executive agencies of the government charged with the administration of the medical benefits under consideration.

All of the individuals contacted have been extremely cooperative and interested in the work of the Committee and have offered their assistance and that of their staffs in conducting the necessary research work. The full report of the Committee, which will be distributed to the membership of the House of Delegates, outlines the research activities initiated to date and the conferences which have been held.

The material and comments which the Committee has received to date indicate the extreme necessity for a considered and cautious approach in arriving at policy recommendations with respect to the questions under study. It is the recommendation of the Committee, therefore, that definitive action in connection with any of these aspects of federal medical care be held in abeyance until the final report is submitted in December. In line with this reasoning, it is suggested that effectuation or full implementation of the resolution of Dr. R. L. Novy of Michigan, which was adopted by the House of Delegates in December, 1951, be withheld until the Committee has completed its inquiry. Dr. Novy's resolution provides:

"That if in the independent judgment of the Department of Defense or Congress the welfare of our preparedness program requires that dependents of members of our Armed Forces receive medical care on a service basis, then the medical profession stands ready to provide such service through Blue Shield and other medical society sponsored plans."

In conclusion, the Committee would like to take this opportunity to thank the members of the profession and officials of public and private agencies and associations for their cooperation and helpful comments and suggestions. In its effort to prepare a truly exhaustive and representative report, the Committee has invited and continues to invite any comments, suggestions and assistance germane to the subject of its inquiry from any member of the profession or the general public.

The Speaker referred portions of the supplementary report of the Board of Trustees to reference committees, as follows: Introductory Remarks, Honoraria for President and President-Elect, Advisory Committee to Board of Trustees, Advisory Committee on Policy, Washington Property, Joint Statement of Principles Relating to Local Community Planning for Health, and 1953 Dues of the Association to the Reference Committee on Reports of Board of Trustees and Secretary; Coordination Between the Federal Civil Defense Administration and Military Organizations, and the two Resolutions from the Council on National Emergency Medical Service to the Reference Committee on Medical Military Affairs; Uniform Types of Membership, and General Practitioner's Award to the Reference Committee on Miscellaneous Business; Health Home Council to the Reference Committee on Hygiene and Public Health; Development of Case Finding Methods, and Report of Special Committee on Federal Medical Services to the Reference Committee on Insurance and Medical Service; Committee on Legislation and S. 1140 to the Reference Committee on Legislation and Public Relations; Licensure or Certification of Clinical Psychologists to the Reference Committee on Medical Education and Hospitals.

Hearing no objection, the Speaker declared that the report of the Committee on Legislation as printed in the Handbook (see THE JOURNAL, page 860) was accepted, and also declared that since the report on the place of the 1955 Clinical Session was only informative there would be no referral.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. Hoyt B. Woolley, member of the reference committee, presented the following report, which was adopted:

Introductory Remarks: Your committee commends the Chairman of the Board of Trustees for his complimentary remarks.

Honoraria for President and President-Elect: This supplementary report was also introduced by Dr. Murray. Your committee approves the action of the Board of Trustees and commends them for their action.

Advisory Committee to Board of Trustees: Your committee recommends approval of this supplementary report introduced by Dr. Dwight H. Murray.

Advisory Committee on Policy: Your committee approves of the supplementary report in principle but recommends that of the committee of five, two members shall be appointed who are members of the House of Delegates.

Washington Property: This supplementary report, introduced by Dr. Dwight H. Murray, is approved by your committee in principle. Your committee recommends continued search for suitable property, progress report to be made to the House of Delegates at its next meeting.

Joint Statement of Principles Relating to Local Community Planning for Health: Your committee did not deem it necessary to take action on this supplementary report, as this report was referred to the Committee on Hygiene and Public Health.

1953 Dues of Association: Your committee had referred to it a supplementary report introduced by Dr. Dwight H. Murray, Chairman of the Board of Trustees, recommending the dues for active members of the American Medical Association be $25 in 1953. Your committee recommends approval of this supplementary report.

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. Joseph H. Howard, Chairman, presented the following report, which was adopted:

A supplementary report of the Board of Trustees pertaining to Coordination Between the Federal Civil Defense Administration and Military Organizations was reviewed. A policy was recommended in December, 1951, by the Reference Committee on Medical Military Affairs and since then has been an activity of the Council on National Emergency Medical Service. We approve this recommendation and suggest the continuation of this activity by the Council.

A supplementary report of the Board of Trustees regarding activities of the Civil Defense Administration was reviewed and the committee approved of this resolution with one modification. The change suggested by the committee is as follows: In the phrase which reads "such authoritative federal control shall be activated only in those areas in which the disaster has paralyzed," we suggest that the words "local, regional, and national" be inserted after the word "areas."

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Resolution on Uniform Types of Membership: Your committee recommends that the Board of Trustees be authorized to appoint a committee to study this subject and set forth suggestions as to how such uniformity can be accomplished which in turn, if approved, can be transmitted to the various state organizations.

Supplementary Report of Board of Trustees on General Practitioner's Award: Your committee concurs in the recommendation of the Board of Trustees and moves its approval.

REPORT OF REFERENCE COMMITTEE ON HYGIENE AND PUBLIC HEALTH

Dr. William F. Costello, Chairman, presented the following report, which was adopted:

Health Home Council: Your reference committee approves the request of the Board of Trustees in regard to the setting up of a Health Home Council. Your committee has made two minor changes in the supplementary report of the Board on this matter and feels it is necessary to read the report, indicating these changes, as follows:

The Joint Committee on Rehabilitation of the Council on Industrial Health and the Council on Physical Medicine and Rehabilitation is concerned with employment opportunities for the handicapped and has been approached by the Edison Electric Institute and the National Electrical Manufacturers Association —and here we have added "and such other organizations as may be interested"—to explore with them the desirability of setting up a Health Home Council under qualified medical guidance. The intent of this Health Home Council would be to promote research and the spread of authentic information to the public, to industry and to professional groups concerning work simplification and energy-saving devices for housewives with cardiac, tuberculous, or other severely disabling diseases—and we have added "or handicaps"—since home-making is an occupation which has preeminent importance as a factor in community health, industrial production, and family welfare.

In view of these facts, the Board of Trustees requests approval by the House of Delegates of the principle of this proposal so that the Joint Committee of the two Councils may investigate this activity and make specific recommendations to the Board of Trustees and the House of Delegates at its earliest opportunity.

Joint Statement of Principles Relating to Local Community Planning for Health: The statement was presented and very freely discussed by the members of the Board of Trustees and other interested physicians. As a result of the discussion, your reference committee has deleted some portions as submitted and has changed the phraseology of others, all of which changes have met with the approval of the Trustees present. The amended principles are as follows:

Although the origins of the community development of health programs cannot be clearly identified, the current trend in the development and coordination of health efforts on a community-wide basis began to take form in the decade marked by the first World War.

As of September, 1950, 1,224 such community health integrating bodies were known to be operating in various parts of the United States and its territories. These bodies whether they be called "health committees," "health federations," "health divisions of councils of social agencies," "citizen planning committees," or simply "community health councils," have demonstrated that they are effective instruments for improving community health.

Today, old councils are being revived and reorganized and new ones are being formed at an ever accelerated rate, as can be seen from the fact that more than one fourth of the 1,190 local councils which were in existence in 1950 were organized in the preceding two years.

They do not need pressure from higher organizational levels but guidance, encouragement and assistance from all sources so that they may better meet the needs and conditions within their own communities.

As a means of furthering this community effort, the Inter-Association Committee on Health of the six national associations of professional health and welfare workers adopts the following principles relating to "local community planning for health."

I. Basic Premises Underlying Planning for Health.

1. Health may be defined as a state of optimal physical, mental and social well-being—not merely the absence of disease or infirmity.
2. Achievement of health is primarily a personal responsibility but is also closely related to the family's and the community's way of life.
3. The initiative and interest of the individual in his own health is essential to the effective furtherance of the health of the community. The effective furtherance of community health is also dependent on the initiative, interest, aggressive support, and participation of individuals and groups in the entire community—professional workers in the field of health and public representatives.
4. Community provisions for health should be integrated with all measures to improve the economic and social well-being of the community.
5. An effective instrument for developing community organization for health is the "health council," which may be defined as: "A voluntary association of individuals and organizations, representative of the entire community, which concerns itself with the joint evaluation of health needs and the development and coordination of health services so as to bring about more effective utilization of health resources."

II. Basic Principles of Organization and Operation of Health Councils.

1. The person or organization taking the initiative in organizing a health council is less important than the motives for which a health council is organized. A health council is a community wide project and is not to serve the selfish motives of any particular agency or group, nor can it afford to be dominated by any person, agency, or group.
2. No one organizational form applies equally to all health councils; each will have to grow in a manner which best fits the needs of its own particular community.
3. A community health council may effectively represent any "natural community," rural or urban, and need not coincide with county lines or with the corporate limits of a city or town.
4. The support of the medical profession is essential to the success of any community health program. However, since a health council is a community-wide project, its membership should, as far as possible, represent all community interests.
5. The degree of its success depends upon the extent to which all community interests, lay as well as professional, learn to work together for the public good.
6. Continuity and permanency are essential if a health council is to be an effective body regardless of its organizational form.
7. In any such program a thorough knowledge of the community's health problems and resources is essential.
8. Successful health councils require continuous financial support. It is best for them to be financed by contributions from within their own community, and from sources which will not tend to limit their freedom of thought and action.

III. Major Recommendations.
The Inter-Association Committee on Health urges:

1. The early formation of local health councils where they do not now exist and the strengthening of existing local health councils so as to make them more effective instruments for community health programs.
2. That citizens, both as individuals and as representatives of organizations, participate in programs for health in order that they may assume their proper role of leadership in meeting their own health needs.
3. That physicians, dentists, nurses, hospital administrators, and public health and public welfare workers cooperate with and participate in efforts to further local community programs for health improvement.

The Reference Committee recommends approval of this set of principles, to be submitted to the Inter-Association Committee on Health.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. William D. Stovall, Chairman, submitted the following report, which was adopted.

Development of Case Finding Methods.—There were several members of the Association who appeared in favor of this proposal presented in the supplementary report of the Board of Trustees. No one opposed it. The committee approves the report and recommends its adoption by the House of Delegates.

Report of Special Committee on Federal Medical Services.—A large number appeared before the committee to discuss this report, among them Dr. Elmer L. Henderson, Dr. H. H. Shoulders, members of the Board of Trustees, and others. This is a progress report of the special committee appointed following the action of the House of Delegates in Los Angeles last December. For the purpose of clarification, the committee feels it is necessary to read the report of the Reference Committee on Legislation and Public Relations, presented at the Los Angeles Session:

> "The resolutions introduced by Dr. J. P. Wall, Mississippi, regarding veterans' facilities for non-service-connected disabilities, the resolution presented by Dr. James Z. Appel, Pennsylvania, regarding medical care of veterans, and the resolution presented by Dr. C. M. Hamilton, Tennessee, regarding medical care for veterans, which cover the same basic subject, were read and considered with deep interest; they have been the subject of extensive discussion at the hearings before this committee. Particularly we wish to commend Dr. H. H. Shoulders of Tennessee for the persevering, conscientious, earnest effort he has made toward a solution of the complex problem with which we are faced in dealing with non-service-connected disabilities of veterans and their medical care.
>
> "Inasmuch as this problem concerns many groups, such as veterans' organizations, voluntary hospital associations, civilian medical care, voluntary insurance organizations and many others, this committee recommends that the entire problem be referred to the Board of Trustees. It further recommends that the Board, at an early date, create a special committee to consider this complex problem in conference with other groups involved at the top flight or policy making level. Your committee realizes that this is a matter which requires persistent, continuous study, and definitely urges the Board of Trustees to make a report of the activities of the special committee at the June Session in Chicago."

It is the opinion of the committee that the above report of the reference committee at Los Angeles was authorization to the Board of Trustees to create a committee for the study of the various problems touching on Federal medical services rather than any single individual problem. During the discussion it was brought out that certain of these individual problems have been before the House several times since 1948.

At the first meeting of this House Dr. Henderson read a progress report of the studies now being made by the Special Committee. In the discussions before the reference committee, it was shown that the work has gone much further than indicated in the report since many organizations other than those mentioned have already been contacted or interviewed. The reference committee is convinced of the significant progress that has been made, and awaits the final report of the Special Committee in December, 1952.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted:

Supplementary Report of Board of Trustees on S. 1140.—Your committee has considered carefully the subject matter of the report by the Board of Trustees to the House of Delegates on S. 1140, 82d Congress, on the activities of the National Doctors Committee for Improved Federal Medical Services. Your committee is in thorough accord with the objective of the Hoover Commission to eliminate waste in the federal government. However, it is the opinion of your committee that the plan of the National Doctors Committee to include in a department of health the hospital care of the armed forces and the Veterans Administration would certainly encumber a health department and might defeat the prime objective of a health department, which is preventive and educational in nature. We therefore recommend that the House of Delegates reaffirm the specific resolutions of the Board of Trustees, as follows:

"(1) That a board be established on the federal level to control the distribution of beds among the several federal hospital services and to determine the need and location of proposed new federal hospitals in the continental United States. This board should be made up of recognized authorities in the field of medicine and hospital administration. The Surgeons General of the Armed Forces and the Public Health Service, and the Chief Medical Director of the Veterans Administration should be consultants to this Board.

"(2) That the Armed Forces and the Veterans Administration maintain their present administrative independence but that they come under the Board with reference to (a) joint utilization of available beds, and (b) construction, expansion and location of federal hospitals in the continental United States.

"(3) That the present law pertaining to the hospitalization of veterans with non-service-connected disabilities be reviewed by the Congress and amended for the purpose of controlling the admission to veterans' hospitals of non-indigent veterans with non-service-connected disabilities."

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. Edgar V. Allen, Chairman, presented the following report which was adopted:

Supplementary Report of the Board of Trustees Pertaining to Licensure or Certification of Clinical Psychologists.—The supplementary report of the Board of Trustees on the subject of the licensure or certification of clinical psychologists introduces implications which your committee feels should be given further study and elucidation. In distinguishing between certification, which was recommended, and licensure which was not recommended, it was pointed out that certification meant simply that a board of clinical psychologists would be established under state law with power to designate individuals as being qualified clinical psychologists. In the opinion of your committee, the establishment of certifying boards under state laws might not in itself be an unmixed blessing, and the step to a licensing board would be a short one.

Your reference committee recommends disapproval of this recommendation and recommends its referral to the Council on Medical Education and Hospitals for further study along with the problems relating to the recognition of other non-physician specialists.

Statement of Dr. Louis H. Bauer Re International Labor Organization and World Medical Association and Resolutions on Amendment to Constitution of the United States (S. J. R. 130)

Dr. Louis H. Bauer, President-Elect, presented the following statement and resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

The International Labor Organization will hold an official conference in Geneva this month, at which one of the topics for consideration will be minimum standards for social security including medical care, and that some consideration will also be given to possible maximum standards of social security.

There have been distributed to you two documents. One is a mimeographed sheet giving an introductory statement entitled, "The World Medical Association," which appeared on pages 488 and 489 of THE JOURNAL for May 31. I would just like to underline one or two points in it.

I would like you to bear in mind that this program if adopted by the I. L. O. at its convention will be submitted to all member governments for adoption, and the United States is a member of I. L. O. It envisages the inclusion either of 20 per cent of the population, 50 per cent of all employees, or 50 per cent of all residents.

The only medical document which is being distributed to the delegates of I. L. O. is a document which was prepared by a committee of consultants which was appointed by the World Health Organization at the instance of the International Labor Organization. As a result of that, the World Medical Association at the meeting of its Council in Brussels adopted a document on social security. This also appeared in THE JOURNAL for May 31 on page 489.

"Most people are still brought up on an old-fashioned principle of ethics and behavior, which is that a man should primarily be responsible for himself and his activities. He finds, however, that his activities are hedged around with restrictions, and that many of his former responsibilities are being taken away from him. With them go much of his old freedom and even more of his earnings, and he finds himself burdened with new tasks, this time not for himself but for some remote conception such as the state or the community. Again, the individual must not be allowed to forget that his security is primarily a matter for his own effort. It is unwise for him to be led to believe that the state or the community can take over and relieve him of his responsibility. Anything created without due observance of this principle will from the very beginning carry within itself its own seeds of destruction. If the ties between benefit-right and contribution payment are loosened, the individual will ignore the cost of the services given. If insurance principles are abandoned for public service schemes, he will tend to lose his sense of responsibility." That gives you the philosophy which is back of the World Medical Association's statement on social security. It follows twelve principles which were adopted in 1948 and which I think were presented to you three or four years ago, but these principles have been elaborated and clarified as to their exact meaning, and certain recommendations were adopted.

Dr. Dag Knutson of Sweden, who is the President of the World Medical Association, Dr. Clarence Routley, who is a consultant to our Council and is also General Secretary of the Canadian Medical Association, and whom most of you know, Dr. Jean Maystre, who is our liaison officer to the World Health Organization, and I went to Geneva last month to interview the officials of I. L. O. We had seen the document on the I. L. O. conference, and we asked that since that document was being distributed to their delegates, the statement of the Council of the World Medical Association be distributed also. We were given the polite brush-off. We were told that the Secretariat had no authority to do it. They apparently had authority to distribute the other one. I asked the Deputy Director General of I. L. O., the Director General being out of town, "Then, while you intimate that you might be interested personally in reading this document, it wouldn't serve any useful purpose for us to leave it with you?" He admitted that it would just land in the file, and that the only way we could get it before the delegation was to send it to the Chairman of the Conference Committee on Social Security. We asked who he was and were told that he had not been appointed yet and would not be appointed until the conference convenes. Nevertheless, we have sent a copy to that unnamed chairman. However, I have not the slightest confidence in the world that it will ever be distributed through his agency. We are taking steps to see that it is distributed individually to the delegates attending that conference. It has been distributed to all of the national medical associations that are members of the World Medical Association, forty-three in number, and Dr. Smith printed the report in THE JOURNAL on May 31.

The importance of it, gentlemen, is this, that this committee which was appointed by the W. H. O., called a consultant committee, was composed of not one single practicing physician. One member of the committee is not even a physician. This committee came out in favor of a full-time, salaried health service for medical care under social security in every country in the world, and that is the recommendation which will go to I. L. O. delegates, and, unless we are able to have the opinion of the medical profession brought before those delegates, that is the only medical document they will have.

I shall read you a statement that this committee made about the medical profession: "The fee for service system exposes the physician to the temptation to care for a patient who should be sent to a specialist or an institution. It gives an incentive for the prolongation, rather than the reduction, of illnes." I consider that an insult to the practicing medical profession of the world.

It is highly important that you know about this so that you can contact your representatives in Congress, because when this report comes back from I. L. O., if they adopt this convention, and I have very little doubt that they will, it will be before the United States to approve, and, as Dr. Murray indicated in his report, we are subject to attack not only from within the country but from without, and that brings up the whole question of international covenants and agreements outweighing our own constitutional provisions. We have the same thing in the Declaration of Human Rights drafted by a suborganization of the United Nations. In that there is a particularly vicious statement which states that every country should see that medical care is provided by legislation. Some of the things in it we could agree with, but that one statement is merely an attempt again to bore from without into the affairs of an individual country. For that reason, the Board of Trustees has recommended that the House approve the following resolution, and I have been asked to read it to you because it ties in with what I had to say about this particular international group.

Resolved, That the American Medical Association strongly favors an amendment to the Constitution of the United States which will provide that no treaty or executive agreement shall be made which conflicts with any provision of the Constitution or which operates or may operate to regulate any of the purely domestic affairs of the United States; and be it further

Resolved, That the American Medical Association therefore endorses in general the principles set forth in Senate Joint Resolution 130; and be it further

Resolved, That copies of this resolution be sent to the Chairman of the Senate Judiciary Committee, the President of the Senate and the Majority and Minority leaders of the Senate.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted:

Your committee considered the resolutions presented by Dr. Louis H. Bauer relative to a proposed amendment to the Constitution of the United States providing that no treaty or executive agreement shall be made which conflicts with any provision of the Constitution, or which may operate to regulate any of the purely domestic affairs of the United States. Your committee approves the resolution and recommends its adoption.

Introduction of Delegates from Student American Medical Association

The Speaker introduced to the House the two delegates from the Student American Medical Association, Mr. Frank Shubeck of the University of Michigan Medical School, and Mr. David Buchanan of the University of Illinois College of Medicine.

Report of the American Medical Education Foundation

Dr. Elmer L. Henderson, President of the Foundation, presented the following report, which was referred to the Reference Committee on Medical Education and Hospitals:

I thank the House of Delegates for this opportunity to bring you a report on the progress that the American Medical Education Foundation is making. We are now well into the second year of the effort to enlist the support of the medical profession in raising an annual fund from voluntary sources to assist our hard pressed medical schools.

In our first year we raised a total of $745,000. When this sum was added to the gifts received from business and industry by the National Fund for Medical Education, a total of over $1,600,000 was achieved which was distributed in grants to each of the medical schools. These grants, while averaging only a little more than $20,000 per school, for many schools constituted the largest amount of totally unrestricted money that they had available to meet their most urgent needs. Letters from the medical schools indicating their very real appreciation for this assistance testify as to the importance of these grants.

For 1952, we have set a goal for our own efforts of $2,000,000 and we hope that this will be more than matched by contributions from business and industry to the National Fund for Medical Education. Thus, by the end of this year I hope that we will be well on our way to achieving the immediate goal that we have set for our combined efforts of raising an additional $5,000,000 annually for our medical schools.

As you all know, the Trustees of the American Medical Association at the beginning of the year again started us off with a generous contribution of one-half million dollars. Most of the state medical societies, together with their county societies, have been carrying on an intensive campaign for contributions from their members. This campaign began officially in April and will run through this month. The enthusiasm with which the state societies have tackled this program has been most encouraging. They have appointed committees that are working hard; they have contributed substantial sums to meet the costs of the fund raising efforts, and they have had the wholehearted and effective support of the editors of their journals, bulletins, and newsletters.

At the risk of offending by not recognizing all the splendid efforts that have been made, I would like to salute certain states for what they have accomplished already. Indiana leads all states in the total sum contributed by its members in 1952. Pennsylvania, through a voluntary assessment of $25.00 on each of its members has done an outstanding job. To meet its responsibility, Illinois has voted an assessment of $20.00 on each of its members beginning next year.

It is too early to make anything like a final appraisal of the results of these and the other splendid efforts that are being made. We do know that a great deal of momentum has been gained over last year. Already there have been contributions from 2,500 individual physicians, an increase of 39 per cent over the total number of individual contributors for the entire year 1951.

The sum contributed so far by individual physicians which now stands at $121,000 also exceeds the total of $91,000 raised from this source for the entire year of 1951.

Not included in any of these totals are the greatly increased gifts by physicians to individual schools, gifts that have in many instances been stimulated by the attention that the Foundation is drawing to the needs of the medical schools. We will have a total for these gifts at the end of the year.

Although very substantial progress is being made, it is clear that we cannot relax if our goal of $2,000,000 is to be achieved before the year is out. We still have the month of June for our intensive campaigns at the state level and more than six months for the special gifts campaign which will occupy our efforts until the end of the year.

Gentlemen, we have set a real challenge for ourselves by embarking on this great constructive program. I know that there are some within the profession who are faint-hearted at the prospects of our achieving success and there are those who have openly ridiculed the profession on the floor of Congress for its effort to meet this problem through voluntary action.

We have put ourselves on trial, but I know we shall acquit ourselves well in the best tradition of our profession. I hope that every member of this House will, if he has not already done so, contribute promptly and generously to the Foundation and that he will then make it his personal goal to go back home and "get out the givers" through the structure that now exists in the state and county medical societies.

If you will do this, I am sure that I can report to you in December that by your efforts you have confounded our critics and heartened our friends.

CONTRIBUTIONS TO AMERICAN MEDICAL EDUCATION FOUNDATION

Dr. Warren W. Furey, Illinois, presented to the Speaker a check for $2,000 representing a second contribution to the Foundation from the American College of Radiology.

Dr. H. Kenneth Scatliff, Illinois delegate and president of the Chicago Medical Society, announced that the Council of the Chicago Medical Society had recently voted to donate $25,000 to the American Medical Education Foundation, and that it is the desire of the society that this money be spent without restriction and included with the general expenditures of the Foundation.

Dr. Henderson stated that he had just received a check for $1,000 as a personal contribution from Dr. and Mrs. Mather Pfeiffenberger of Illinois, and that the Illinois State Medical Society had recently placed a $20 assessment on each member, the total collection of which will eventually be presented to the Foundation.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. Edgar V. Allen, Chairman, submitted the following report, which was adopted:

Your reference committee commends the excellent report of Dr. Henderson, President of the American Medical Education Foundation. Your reference committee believes that the American Medical Education Foundation deserves and should have the unqualified support of all members of the American Medical Association. Many of the constituent state medical associations have set up committees for the collection of funds from their members in addition to making a substantial contribution to the Foundation from their own funds. Your reference committee urges that similar committees be formed in the state societies where this has not been done. The large sums collected by some state and county medical societies is an indication of what can be accomplished when the importance of this laudable undertaking is brought to the attention of each individual member of the Association. Your reference committee believes that those who adhere to the basic concepts of democracy should support the tenets of democracy not only with words but with deeds.

Report of Coordinating Committee

Dr. Elmer L. Henderson, Chairman, presented the following report of the Coordinating Committee, which was referred to the Reference Committee on Legislation and Public Relations:

The American Medical Association's National Education Campaign, created in December, 1948, and continuously active since that time under this committee's supervision, will have completed its mission, we believe, by the end of this year.

The campaign has endeavored to fulfill the several objectives set up for it by action of this House of Delegates, namely:

1. To stop the legislation directed at the socialization of medicine;
2. To help in strengthening constructive programs in all fields of medical economic affairs;
3. To demonstrate publicly the value and merit of prepaid medical care on a voluntary basis, over any compulsory, government-controlled system of medicine; and
4. To interpret medicine's case to the public in a manner to earn broad public support for the profession.

In each case, the public record speaks for the work accomplished. The successful results have far exceeded all our hopes and expectations of 1948 and 1949.

This committee has reported regularly at each successive meeting of the House of Delegates during the Campaign. The reports have covered in detail the following items, briefly stated here:

1. The evidence of steadily increasing public support for medicine's position, as it built up to more than 11,000 national, state and local organizations formally recording their opposition to political control of the practice of medicine.
2. The evidence of similar support, won from nearly 90 per cent of the weekly and daily newspapers of the nation.
3. Repeated evidence that there is little likelihood the present Congress would enact any compulsory health insurance measure, except as a result of legislative trickery such as that attempted again last month by socialized medicine advocates who tucked such a provision into a general social security bill and sought to railroad it through the House under limited debate.

But perhaps the most revealing proof that the objectives set for this committee and for the National Education Campaign are largely accomplished is the fact that the work for the first six months of this year has required an expenditure of only about $100,000. As you know, the saving of a half-million dollars from the campaign budget last year, and the same amount the year before, aided the Association in contributing a million dollars to the American Medical Education Foundation.

Although President Truman is still personally insistent on his National Compulsory Health Insurance program, we believe he is clearly aware that the majority of the people of this nation do not want any such program. In the course of medicine's national campaign, the people have registered their views repeatedly and emphatically, both by defeating socializers at the polls and by their widely expressed support of medicine's position. Although Federal Security Administrator Oscar Ewing, as recently as last month, was still declaring in his speeches that "The American public is becoming more insistent on a form of National Health Insurance," we believe he is fully cognizant that just the opposite is the truth. He has seen the evidence just as all other Americans have seen it. We are optimistic that these and other administration advocates of socialized medicine will receive their final answer directly from the American people in the coming general elections.

It is unusual for a committee to ask for its own dissolution. However, barring a reversal in the general elections in November and a strong recurrence of the threat of socialization, this committee feels that its work will be completed by the end of 1952 and that it should be dissolved at that time. Whitaker and Baxter, the campaign directors, have requested that they be relieved at the same time, with the same contingency in mind.

Doctors, in the interim before the election date, will be urged to study the background and the beliefs of every candidate for public office, irrespective of party labels. They will be asked, as individual citizens, to give their fullest support to leaders of high integrity, who know the values of individual responsibility and the precepts of Amercanism. Doctors, because of their leadership in this nation's first great crusade against socialization, will bear a heavy public responsibility in the period immediately ahead. Their help and their leadership in insuring that this nation does not surrender to socialism, is confidently expected by the citizens of every doctor's home community. At whatever inconvenience, at whatever difficulty, medical men must fulfill that trust.

It is not legally permissible for this committee, the National Education Campaign, the American Medical Association or any medical society, to participate in campaigns for the election or defeat of candidates for public office. All officers of state and county medical societies and thousands of doctors, during the past few months, have been so advised by the campaign office. They have been warned against performing any functions in any national election campaign except as *private individuals and likewise* against permitting their medical society employees to do so. Doctors will continue to be advised, however, as to what they may do legally and what they must do as individual citizens who feel an obligation to help determine the course of government in this nation.

Medicine's campaign has been successful, largely because the profession and its allies made a wholehearted fight for the principles of freedom we believe in. If doctors, acting as individuals, will participate as fully and as idealistically in the current campaign to place in the White House and in the Congress men of high moral integrity, devoted to those same fundamental principles, that campaign, too, can be successful. Then we can end our arduous, extra-curricular work and report to this House, "Mission Accomplished!"

Respectfully submitted,

Elmer L. Henderson,
Chairman.
Louis H. Bauer,
Vice Chairman.
John W. Cline.
Edwin S. Hamilton.
Walter B. Martin.
R. B. Robins.
William Bates.
Gunnar Gundersen.
George F. Lull.
E. J. McCormick.
George A. Unfug.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted:

The report of the Coordinating Committee of the National Education Campaign has been submitted to the members of the House of Delegates in mimeographed form. Your committee approves and recommends the adoption of this report. Further, your committee expresses its endorsement of Clem Whitaker and Leone Baxter as able and efficient servants of the American

Medical Association in the fight against socialism, and takes this opportunity to commend their efforts in furthering the work of the Coordinating Committee.

Report of Council on Constitution and By-Laws

Dr. Louis A. Buie, Chairman, with the permission of the House, read by title the report of the Council on Constitution and By-Laws, *containing three sections*, A, B, and C, and stated that Section A pertained solely to the establishment of a single membership classification and Section B to amendments to the Constitution, that both sections having been introduced originally at the Los Angeles Session in December, 1951, were now ready for referral and adoption, and that Section C contained proposed amendments to the By-Laws to carry out the directive of the House of Delegates with respect to limitation of the terms of office of members of Standing Committees of the House.

Dr. Buie also stated that since the Council's report had been prepared a representative of the Council on Medical Education and Hospitals had requested that its membership be increased from seven to ten, and that the Council on Constitution and By-Laws had prepared an amendment to that effect which would be placed in the hands of the reference committee.

The report of the Council was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Dr. Leo F. Schiff, Chairman, presented the following report, which, after discussion, was adopted section by section and as a whole, the Vice Speaker declaring that each amendment to the Constitution and to the By-Laws was adopted:

Your reference committee again expresses its appreciation for the great volume of detail covered and thought evidently given in preparing the amendments to the Constitution and By-Laws here presented and commends the Council on Constitution and By-Laws for its thoroughness and efficiency in an arduous task.

The report as presented is divided into three parts, A, B, and C. The first refers to those amendments required to establish a single membership classification; the second, for other amendments to the Constitution which, having been introduced in December, 1951, are ready for final action at this session, and the third, to new amendments to the By-Laws in reference to the limitation of terms of office of members of the standing committees.

Part A.—In order to carry out the requirements of a single membership classification, it will be necessary to make the following amendments to the Constitution:

(Page 2) Article 5, Title: Delete the words "and Fellows" from the title of this Article, so that the title will read "Article 5.—Members."

(Page 2) Article 5, Section 1: Delete "Members shall be active or associate."

Insert new paragraph (B), as follows: "(B) SERVICE MEMBERS.—Service Membership in the American Medical Association shall be limited to regular commissioned medical officers of the United States Army, the United States Navy, the United States Air Force and the United States Public Health Service and the permanent medical officers of the Veterans Administration and the Indian Service subject to the provisions of the By-Laws."

Change paragraph (B) to become paragraph (C).

Add new paragraph (D), as follows: (D) The By-Laws may provide for other types of Membership and set forth the eligibility and qualification requirements.

Change paragraph (C) so that it becomes Section 2, and delete from the first and second lines the words "active or associate membership," putting in their place the word "Membership" so that this new Section 2 will read, "A Member shall retain his membership as long as he complies with the provisions of the Constitution and By-Laws and with the Principles of Medical Ethics of the American Medical Association."

(Page 2) Article 5, Section 2: Delete the present Section 2 of this Article entitled "Fellows of the Scientific Assembly."

(Page 4) Article 7, Section 2: In the first sentence delete that part following the word "election" in the second line and substitute the following: "an Active or Service Member of the Association."

(Page 6) Article 9, Section 1: Change the word "Fellows," which is the first word in the first line on page 6, to "Members."

The above comprise all the amendments to the Constitution necessary to achieve single membership classification. The following changes are needed in the By-Laws:

Delete entirely Chapter IV which refers to Fellows.

Change Chapter III to become Chapter IV; Section 2 of Chapter II to become Chapter III with the title "Dues."

Delete Chapter I and substitute the following:

Chapter I.—Qualifications, Election and Rights.

Section 1.—Active and Associate Members.—Members in good standing of the constituent associations of the American Medical Association are eligible for either Active Membership or Associate Membership in the American Medical Association after they have been certified for enrolment by the secretaries of their constituent associations to the Secretary of the American Medical Association, provided they possess the qualifications set forth in Article 5 of the Constitution, and provided that they are approved for Membership by the Judicial Council. A physician eligible for Active Membership in the American Medical Association becomes a Member of the Association on receipt by the Secretary of the American Medical Association of his American Medical Association dues, unless he is exempted from payment of dues as provided in Chapter II, Section 2 of these By-Laws. Associate Members may attend meetings of the Scientific Assembly but may not vote or hold office in the American Medical Association. They shall not be required to pay membership dues to the American Medical Association and shall not receive any publication of the American Medical Association except by personal subscription.

Section 2.—Service Members.—On approval of the Judicial Council, regular commissioned medical officers of the United States Army, the United States Navy, the United States Air Force or the United States Public Health Service, who have been nominated by the Surgeons General of the respective services, and the permanent medical officers of the Veterans Administration and the Indian Service, who have been nominated by their Chief Medical Directors, may become Service Members. Such Members shall have the same rights and privileges as Active Members but shall not be required to pay dues and shall not receive any publication of the American Medical Association except by personal subscription. Service Members shall retain Membership as long as they are on active duty and thereafter if they have been retired in accordance with federal law and do not engage in active practice.

Section 3.—Affiliate Members.—Persons who belong to one of the following classes may become Affiliate Members:

(1) Physicians who are members of the chartered national medical societies of foreign countries adjacent to the United States, to be approved and nominated by the Judicial Council;

(2) American physicians located in foreign countries and engaged in medical missionary and similar educational and philanthropic labors, to be *approved and nominated by the Judicial Council;*

(3) Dentists who hold the degree of D.D.S. or D.M.D., who are members of state and local dental societies, to be approved and nominated by the Section on Laryngology, Otology and Rhinology;

(4) Pharmacists who are active members of the American Pharmaceutical Association, to be approved and nominated by the Section on Experimental Medicine and Therapeutics, and

(5) Teachers of medicine or of the sciences allied to medicine who are citizens of the United States and are not eligible to Membership, to be approved and *nominated by officers of a section.*

Nominations for Affiliate Membership must be made by the respective approving agencies not later than the fourth day of the week of the annual session for consideration and recommendation to the House of Delegates for action. A majority vote of the House of Delegates shall elect nominees to Affiliate Membership. Affiliate Members shall not be required to pay Membership dues and shall enjoy the privileges of the Scientific Assembly without the right to vote or hold office.

Section 4.—Honorary Members.—Physicians of foreign countries who have risen to preeminence in the profession of *medicine and who are in attendance at the session may be elected to Honorary Membership by* the House of Delegates on the nomination of the Council on Scientific Assembly. The several sections may make recommendations to the Council on Scientific Assembly regarding persons for such nomination. Honorary Members shall enjoy the privileges of the Scientific Assembly without the right to vote or hold office and shall not be required to pay Membership dues.

(Page 9) Chapter II: Change the title of this chapter from "Tenure and Obligations of Membership; Dues" to "Tenure of Membership."

Section 1: Delete the title of this section, "Tenure and Obligations of Membership."

Substitute the words "an Active or Associate Member" in place of the words "a member" in the third line.

Make the balance of Section 1 into a new section by inserting "Section 2" before the beginning of the second sentence. In that sentence substitute for the words "A member" the words "An Active or Associate Member."

Add a new Section 3, as follows:

Section 3.—Any member may be censured, suspended or expelled as provided in Chapter IV of the By-Laws.

Chapter V: Subsection (1)—Substitute the word "Members" for the words "Member or Service Fellows."

Delete Subsection (2) and subsections (3) and (4). Add a new subsection (2) as follows:

(2) Invited Guests.—Residents of the United States who are not engaged in the practice of medicine and eminent persons from foreign countries may be invited by the general officers or by the officers of a section to attend a session of the Scientific Assembly and may participate in the scientific work and social functions. They shall be designated as Invited Guests.

Change the numbers of subsections (5) and (6) to (3) and (4) respectively.

Delete the last paragraph of this Chapter and substitute the following: "A Member shall designate at the time of registration the section in which he wishes to be enrolled and shall be enrolled in one section only."

Chapter VII, Section 3 (Page 18): Section Officers. Delete the words "Member or Service Fellows" in the fourth line of this Section, substituting therefor the words "Active or Service Members."

Substitute the word "Member" for the word "Fellow" in the sixth from the last line of this Section.

Chapter VII, Section 8: Delete the words "Member and Service Fellows" in the first sentence and substitute the words "Active Members." In the second sentence, delete the phrase "Member and Service Fellows and Associate, Affiliate and Honorary Fellows" and substitute the words "Members in good standing."

Chapter VII, Section 9 (Page 21): Change the word "Fellow" in the last sentence of this Section to the word "Member."

Chapter VII, Section 10 (Page 21): Delete the word "Fellow" in the first sentence of this Section, and substitute therefor the word "Member."

Chapter IX, Section 1 (Page 23): Change the wording of this Section to read as follows: Section 1. Delegates.—(A) Qualifications.—In order to be eligible for election to membership in the House of Delegates, a physician must have been an Active or Service Member of the American Medical Association for at least the two years immediately preceding the session of the House in which he is to serve.

Chapter IX, Section 3 (C) (Page 27): In the sixth line of this paragraph (C) change the words "Fellows and members" to the word "Members."

Chapter X, Section 2 (Page 28): Delete from the first sentence of this Section the words "Member or Service Fellow" and insert in their place the words "Active or Service Member."

Chapter X, Section 3 (Page 28): Change the word "Fellow" in the next to the last line of this Section to the word "Member."

Chapter X, Section 4(A) (Pages 29-30): Delete the words "Member or Service Fellows" occurring in the second line of each of the five paragraphs of this subsection, and substitute therefor in each instance the words "Active or Service Members."

Chapter X, Section 4(H) (1) (Bottom of page 31): Delete the word "original" in the first line of the second paragraph of this section. Substitute for Subsection (a) of this paragraph the following: "(a) all questions involving Membership as provided in Division One, Chapter I, Section 1 and Chapter IV of the By-Laws."

(Page 34) Chapter X, Section 4, (I) (3) (g): Change the last word in paragraph (g), "Fellowship" to the word "Membership."

(Page 38) Chapter XI: Change the title of this Chapter to read: "Nomination, Election and Installation of Officers and Affiliate and Honorary Members."

(Page 39) Chapter XI, Section 2: Delete the word "Associate" in the first line, and substitute the word "Members" for the word "Fellows" where it appears in lines two and three.

(Page 41) Chapter XII, Section 6 (G).: Delete the words "and Fellows" from this paragraph.

(Page 45) Chapter XIV, Section 1: From line 4 of this Section delete the word "Fellow" and substitute for it the word "Member."

(Page 45) Chapter XIV, Section 2: In line 4 of this Section delete the words "Member or Service Fellows" and substitute "Active or Service Members."

(Page 45) Chapter XIV, Section 3: Delete the word "Fellow" in the first and fifth lines of this Section and substitute the word "Member."

(Page 46) Chapter XIV, Section 3: Delete the word "Fellow" in the seventh line on page 46 and substitute the word "Member."

(Page 46) Chapter XIV, Section 3: In the fourth line of the second paragraph of Section 3, delete the word "Fellows" and add the word "Members."

Part B.—Amendments to the Constitution Introduced December, 1951, for Final Action at this Session, Exclusive of Those Presented Under Section A of this Report:

1. Amend Article 6, Section 3, by inserting the words "United States Air Force" after the words "United States Navy."
2. Amend Article 6, Section 2, by inserting the words "Past Trustees of the Association" after the words "the general officers, the Past Presidents."

Part C.—New Amendments to the By-Laws Proposed at this Session:

Your committee recommends the adoption of the following amendments to the By-Laws to carry out the intent of the House of Delegates as expressed at the meeting in December, 1951, that a limitation similar to that imposed by the By-Laws on the Board of Trustees be placed on the terms of office of members of Standing Committees of the House of Delegates.

Add to Chapter X, Section 4 (page 30), a new subdivision (B) as follows: "No member of any Standing Committee (Council) shall serve for more than two consecutive terms, but a member elected to serve an unexpired term shall not be regarded as having served a term unless he has served three or more years."

Reletter the remaining subdivisions of Section 4, so that present subdivisions (B), (C), (D), (E), (F), (G), (H), and (I), become subdivisions (C) to (J) inclusive, respectively.

Amend the second paragraph of Section 4 (A) (page 29), changing the terms of service of the members of the Council on Scientific Assembly from seven years to five years, so that the first sentence of this paragraph will read: "The Council on Scientific Assembly shall consist of seven Active or Service Members, one of whom shall be a general practitioner. All members shall be elected by the House of Delegates on nomination by the Board of Trustees for terms of five years so arranged that at two annual sessions the terms of two members expire and at three annual sessions the term of one member expires."

Amend the fourth paragraph of Section 4 (A) (page 29), changing the terms of service of the members of the Council on Medical Service from three years to five years, so that the first sentence of this paragraph will read: "The Council on Medical Service shall include six Active or Service Members, each of whom shall serve for a term of five years so aranged that at one annual session the terms of two members expire and at four annual sessions the term of one member expires."

The Council on Constitution and By-Laws recommends to the House of Delegates that the Board of Trustees be authorized to take whatever action it deems appropriate to carry out the provisions of these amendments.

The present By-Laws do not provide that scientific papers delivered at the Clinical sessions of the Association become the property of the Association. The Council therefore recommends that Chapter VIII, Section 4 (page 22) be amended by deleting from the first sentence the words, "to a section and approved by the executive committee," and substituting therefor the words, "at any scientific sessions of the American Medical Association." This amendment will provide for ownership by the Association of papers delivered at all scientific meetings.

Your reference committee has come to realize that our By-Laws have during the course of years become rather complicated with sections, subsections and sub-subsections almost ad infinitum, using Roman and Arabic numerals, capitals and small letters with or without parentheses. Now that the major task of covering the intent and purpose has been accomplished, we recommend to the Council on Constitution and By-Laws a thorough re-study of the structure of the Constitution and By-Laws with the idea of simplifying it.

Report of Council on Medical Education and Hospitals

Dr. H. G. Weiskotten, Chairman, read the following special report of the Council on Medical Education and Hospitals, which was referred to the Reference Committee on Medical Education and Hospitals:

The Council recommends: (1) that a study be made of the relationships of American medicine to professional but nonphysician groups whose work impinges on the practice of medicine, as is the case in such fields as medical microbiology, clinical chemistry, clinical psychology, etc.; (2) that this study be carried out by the Board of Trustees and the Council on Medical Education and Hospitals with a view to considering ways and means of improving the standards and quality of performance in these fields and the relationships of the American Medical Association to these professional groups, and (3) that the recommendations emerging from the study be presented to the House of Delegates for action.

The Council on Medical Education and Hospitals believes that, until such action has been taken by the House of Delegates, the Council should not approve the establishment of any new American Board which would involve the certification of others than doctors of medicine.

The Council has one other item to present at this time. The Council's Essentials for Approved Residencies in Anesthesiology and Otolaryngology and its Essentials of an Acceptable School for Medical Record Librarians have been revised. The changes are essentially in the nature of clarification and amplification of the former essentials and do not involve changes in fundamental policy.

Approval by the House of Delegates of these revised essentials is requested at this time. Copies of the revised essentials have been distributed to the members of the House.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. Edgar V. Allen, Chairman, presented the following report, which was adopted:

Because much of the matter which came before your Reference Committee is within the province of the Council on Medical Education and Hospitals, it is well to review the status of this Council, which is a standing committee of the House of Delegates; its actions are subject to approval or disapproval of this House. Because the Council works in fields which are commonly controversial it must at times serve as a whipping boy for those whose views are not in complete agreement with those of the Council. Your committee wishes to emphasize that the members of the Council are physicians of highest integrity who serve without pay and who hold ever before them the goal of achieving those things which are best for the common welfare of our citizens. In this regard, the Council is in complete agreement with this House of Delegates.

Your reference committee calls attention to a statement previously approved by the Council on Medical Education and Hospitals and the House of Delegates which remains in effect. This statement, printed under the heading of the "Essentials for

Approved Examining Board in Specialties" as revised, was published in 1949. Under the section "Qualifications of Candidates" it clearly states that a candidate must have "a license to practice medicine in a state, territory or possession of the United States." The relationship of microbiologists, clinical chemists, psychologists, and others of similar qualifications to the American Medical Association cannot, therefore, be by means of certification of a specialty board under the aegis of the American Medical Association.

Your reference committee feels, however, this perfectly clear concept does not preclude study and, indeed, that failure to consider nonphysician specialists in allied fields would be a grave error. Your reference committee, therefore, approves such a study and instructs the Council on Medical Education and Hospitals to elicit opinions from all groups concerned.

Your reference committee, therefore, approves of sections 1, 2, and 3 of the special report of the Council on Medical Education and Hospitals with the amendment that the word "recommendations" in Section 3 be changed to the word "report."

Your reference committee also approves that section entitled "Essentials for Approved Residencies in Anesthesiology and Otolaryngology" and "Essentials of an Acceptable School for Medical Record Librarians."

Your reference committee approves the special report from the Council on Medical Education and Hospitals, as amended.

Report of Committee on Blood Banks

Dr. Herbert P. Ramsey, Co-Chairman, presented the following report of the Committee on Blood Banks, which was referred to the Reference Committee on Hygiene and Public Health:

1. *Procurement of Blood for Defense and Civil Defense.*—Since the last report high levels of blood collection for defense purposes were maintained through December and until early in this year. There has been a gradual decline through the past three or four months and as of this time plasma processing plants are not being supplied to capacity. From Red Cross data it is learned that for the entire period, Dec. 1, 1950, through April 30, 1952, a total of 2,558,000 units of blood were collected for defense purposes, of which 2,094,000 were collected through Red Cross regional and defense centers and 464,000 units were collected through cooperating blood banks. In the period July 1, 1950, to March 31, 1952, a total of 209,000 units of whole blood were shipped to the military for overseas use and 2,110,000 units were shipped for the military to plasma processing plants. Approximately only 9% of defense blood obtained in this country was shipped overseas as whole blood although the armed forces publicity program emphasized whole blood for overseas. It should be noted, however, that blood used overseas included also blood procured overseas from the armed forces and civilian donors.

As of March 31, 1952, the facilities in use consisted of 45 regional programs and 15 defense collection centers of the Red Cross and 37 cooperating blood banks. This last figure compares with 33 independent banks reported to the House last December as cooperating. The committee observes that, as predicted in its earliest reports (1948-1949), when the Korean conflict started in June, 1950, the Red Cross as a going concern was ready to start immediately collection of blood for defense. Whole blood was shipped to Korea within 48 hours of the receipt of the first requisition. We felt then and now that the Red Cross is the only present organization geared to the emergency blood needs of defense.

It should be noted that while the minimum primary quotas allocated to the Department of Defense for reserves will be met during this summer, no letdown in the program of defense blood must be permitted, for two reasons: (1) the continuing operational needs of the armed forces and their hospitals must be maintained and (2) a plasma reserve for civil defense of proportions almost equal to that of the Department of Defense is yet to be created. The responsibility of the medical profession and of the public for the protection of our civil population must be fully and patriotically discharged. Nothing must be permitted to disturb the accumulation of the reserve for civil defense.

The Red Cross, the cooperating blood banks, and all other cooperating organizations and agencies and the public should be commended for a program well started and maintained up to this time.

The Federal Civil Defense Administration has just issued its technical manual "Blood and Blood Derivatives Program," a 180-page booklet for the use of civil defense organizations. It may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., price 40 cents. Its compilation was assisted by many organizations including the American Medical Association. It is essential reading for civil defense medical activities.

2. *Red Cross Blood Program.*—In our last report, mention was made of a Red Cross special study committee whose purpose was to examine the blood program and to report its recommendations to the board of governors. Letters were addressed to officials of interested and cooperating agencies inviting comment, and a report was prepared. So far as your committee knows, no direct hearings or conferences were held with representatives of interested organizations. This report was never made public, but a summary of "Policy Changes in the Blood Program" was issued to chapter chairmen by the president of the Red Cross under date of May 14, 1952. The name has been changed from "Red Cross National Blood Program" to "Red Cross Blood Program," consequent to the organization of the National Blood Program by the Office of Defense Mobilization. It is stated that "the entire program will be determined by response of the American people with their blood and money. The Board of Governors recognizes the medical character of the blood program, and has established the policy that this program is to be directed by a doctor of medicine. It is further provided that 'all civilian programs are to be inaugurated only after receipt of the written approval of the county medical society, the hospitals, and the health authority for each county concerned.'" The board of governors has recommended the discontinuance of the development of "individual credits" for blood donors, but recommends that a policy of "group credit" be encouraged, provided that such credits do not endure for more than one year.

The Board of Governors passed a resolution on relationships as follows:

> *Resolved,* That the American Red Cross recognizes and appreciates the contributions made by all groups, and desires to maintain the most cordial relationships with those agencies concerned with the collection and distribution of blood. It is its desire that full consideration and credit be given to all organizations cooperating in the "National Blood Program." To achieve such a desirable relationship, regional blood centers of the American Red Cross should constantly follow the general policy laid down by the board of governors of the American National Red Cross.

The summary contains an expression of concern about financing the blood program but also reaffirms the principle of delivering blood to hospitals without charge to the patient "for the product itself."

In some areas misunderstandings have continued to appear from time to time. These areas have been in the minority. Elsewhere the general cooperation and the working of the program have been good on the whole.

The committee at this time is embarking on a program of explorations with the Red Cross and other organizations regarding further evolutionary changes which may contribute toward a smooth working and more permanent national blood program. Much remains still to be accomplished in this field of exploration, and it is expected that a more definitive report will be forthcoming at an early date. As noted in our last report the Red Cross has no plans for increasing the number of its regional centers beyond the 47 originally planned of which 45 are now in operation.

To its great regret the committee learned of the sudden death of Russell L. Haden, M.D., in Cleveland in April, 1952. The services of Dr. Haden as chairman of the Committee on Medical Policies and Procedures of the American National Red Cross were of the greatest value, and his presence and advice will be sorely missed. Pending the appointment of his successor, Admiral Ross T. McIntire is filling this office in an acting capacity.

3. *Misunderstandings and Misinterpretations.*—(A) The inference that the Red Cross makes a profit of blood collected by cooperating blood banks is completely unfounded. Money reimbursed to the Red Cross by the Department of Defense includes the cost of collection, processing, and transportation to plasma processing and shipping centers. In the case of cooperating blood banks the transportation cost has to be paid in addition to the amount paid to the cooperating blood bank. There is no surplus money left with the Red Cross, since all claims are

audited by the Department of Defense on the basis of actual cost, and moneys in excess of cost are recovered by the Government. (B) There is no such thing as "reserve areas" in blood procurement. Erroneous representations of this sort made by area Red Cross officials were corrected from the national office.

4. *Principles.*—(A) Since blood is derived from human beings only, our aim should continue to be directed at having no profit from trafficking in whole blood itself. However, all services rendered cost something and are paid for by or on behalf of every recipient of such services. In the case of the Red Cross operation capital costs, depreciation of equipment, cost of supplies, and numerous personal services, technical and otherwise, amount to about $5.00 per pint. It should be made clear that everyone for whom a unit of blood is delivered to a hospital receives not only the blood but also, in effect, a contribution of at least $5.00 furnished by the subscribers to the American Red Cross campaigns. It is doubtful whether in the long run it would be wise to continue this contribution to persons not otherwise entitled to public support.

(B) The committee has observed the wide variation in service charges in hospitals and blood banks. Local conditions will always cause some variation, but the extremes now observed seem inexplicable. The service charge should cover all costs of the operation including depreciation and expansion reserves, but the realization of profit for the support of other institutional needs should be discouraged.

(C) The principle of county medical society endorsement agreed to by the Red Cross should apply also to other blood programs. So-called "service areas" involve at times more than one county and even more than one state. No blood procurement program, no matter by whomsoever operated, should enter a county or state without such county medical society approval. Conversely, physicians of a county medical society should be free to exercise their judgment in the premises without undue pressure from special pleaders from elsewhere. Furthermore, efforts should be made to avoid friction in borderline areas between two existing blood programs. In these areas cooperative and mutually satisfactory understandings must be had.

(D) Blood program agreements entered into between county medical societies and the Red Cross should be scrupulously honored by both the contracting parties. It would be unfair to the contributors to Red Cross funds to terminate arbitrarily an agreement, predicated upon which the Red Cross had made local capital investments and otherwise carried out its agreement, without providing for indemnification of the capital loss incurred by the Red Cross by the abrogation of the contract. Furthermore, in the public interest no such agreement should be terminated unless it be demonstrable beyond doubt that the community and national supply of blood will be in no way adversely affected by the change.

5. *Office of Defense Mobilization.*—The Committee has continued close liaison with the Subcommittee on Blood of the Office of Defense Mobilization. As forecast in our last report a statement of the coordinating function of the Office of Defense Mobilization in the National Blood Program was issued by the President of the United States under date of Feb. 18, 1952. (This order will be printed in full in the Official Proceedings of the House of Delegates and copies are now obtainable from the Bureau of Medical Economics at Association Headquarters.)

Report of Reference Committee on Hygiene and Public Health

Dr. William F. Costello, Chairman, submitted the following report, which was adopted:

Your reference committee was intensely impressed with the report of the Committee on Blood Banks. This report represents a tremendous amount of work and shows the results of a detailed study of the question. Your reference committee is further impressed with the marked improvement in the relations between the American Medical Association and all other organizations having to do with the procurement, processing, and distribution of blood. This in itself is a very happy situation and we are convinced that this result has been due in a large measure to the diplomatic approach of the Committee on Blood Banks and the manner in which it has carried on its negotiations with these other agencies. We feel that a continuance of this line of approach will do much to further harmonize our relations.

All delegates have been furnished with a copy of the report and I will, therefore, not read it. This report should be considered in the light of a progress report, as there are so many problems on which a definitive action cannot now be taken. Your committee would like to call the attention of the House to some portions of the report and to make certain observations.

We would call your attention to the great importance of the storage of plasma for military defense and civil defense. We would like to emphasize the fact that the Committee on Blood Banks is impressed and worried at the apathetic attitude of the average physician to his responsibilities on all matters pertaining to civil defense. Despite the fact that the American Medical Association has been in the forefront in civil defense thinking, our membership is still apathetic.

The Committee on Blood Banks emphasizes the importance of keeping a balance between the blood for military and civil defense and that for civilian use. Emphasis must be placed on the need for active state committees on blood banks to function satisfactorily in our future evolution of this problem. The state societies who name these committees should be impressed with the necessity for a composite representation on the committees.

Your committee would call to your attention Section 2 of the report, wherein the President of the Red Cross, under the date of May 14, 1952, states: "It is stated that 'the entire program will be determined by response of the American people with their blood and money.' The Board of Governors recognizes the medical character of the Blood Program, and has established the policy that this program is to be directed by a doctor of medicine. It is further provided that 'all civilian programs are to be inaugurated only after receipt of the written approval of the county medical society, the hospitals and the health authorities for each county concerned.' "

We would call your special attention to the next to the last paragraph of Section 2: "The committee at this time is embarking on a program of explorations with the Red Cross and other organizations regarding further evolutionary changes which may contribute toward a smooth working and more permanent national blood program. Much remains still to be accomplished in this field of exploration and it is expected that a more definitive report will be forthcoming at an early date. As noted in our last report, the Red Cross has no plans for increasing the number of its regional centers beyond the 47 originally planned, of which 45 are now in operation."

We also wish to emphasize Section 4, paragraphs A and B, under "*Principles.*"

"A. Since blood is derived from human beings only, our aim should continue to be directed at having no profit from trafficking in whole blood itself. However, all services rendered cost something and are paid for by or on behalf of every recipient of such services. In the case of the Red Cross operation capital costs, depreciation of equipment, cost of supplies and numerous personal services, technical and otherwise, amount to about $5.00 per pint. It should be made clear that everyone for whom a unit of blood is delivered to a hospital receives not only the blood but also in effect a contribution of at least $5.00 furnished by the subscribers to the American Red Cross campaigns. It is doubtful whether in the long run it would be wise to continue this contribution to persons not otherwise entitled to public support.

"B. The committee has observed the wide variation in service charges in hospitals and blood banks. Local conditions will always cause some variations, but the extremes now observed seem inexplicable. The service charge should cover all costs of the operation including depreciation and expansion reserves, but the realization of profit for the support of other institutional needs should be discouraged."

Your committee recommends that the material just read in A and B under "Principles" be transmitted to the American Hospital Association and each constituent state medical association for transmittal to their respective state hospital associations.

Again, may we congratulate the Committee on Blood Banks for its splendid work and detailed report. Your committee, after its deliberation and discussion with those present, is impressed with the magnitude of this program. In closing, we would say to the House of Delegates if we do not make an effort to evolve a satisfactory program, one will be evolved for us.

(To be continued)

MEDICAL NEWS

CALIFORNIA

Personal.—Dr. Edwin H. Lennette, chief, viral and rickettsial diseases laboratory, California State Department of Public Health, is on leave from June 1 to July 15; he will spend most of this time in Spain as a consultant on Q fever. The trip is being made at the request of the Spanish government and under the auspices of the World Health Organization.

Society News.—The Los Angeles Obstetrical and Gynecological Society has elected Dr. Earle W. Cartwright, Pasadena, president, Dr. Stirling G. Pillsbury, Long Beach, vice-president, and Dr. Aaron N. Webb, secretary. Meetings will be held on the second Tuesday of September, November, January, March, and May.——The Beverly Hills Medical Society, founded in 1936, will henceforth be known as the Beverly Hills Academy of Medicine.

Hearing Aid Consultation.—The San Francisco Hearing Center's service has been redesignated "Hearing Aid Consultation." The Hearing Center Committee has reevaluated procedures regarding patients referred to the center and has concluded that patients and physicians can be better served by counseling of patients concerning their need for an aid, their special requirements and limitations in regard to the selection of an aid, and the problems that will meet them in adjusting to their aid, rather than by time-consuming tests of the comparative performances of several hearing aids in an effort to discover for each patient the particular aid that benefits him most. The hearing center also is now offering rehabilitation services in auditory training, lipreading, and speech instruction for the aurally handicapped. These services are available on either an individual or a group basis for children and adults. The center is at 1609 Scott St., San Francisco 15.

DISTRICT OF COLUMBIA

Psychiatric Clinic for School Children.—The Kiwanis Club of Eastern Branch, D. C., is sponsoring the first psychiatric clinic especially set up for Washington school children. The clinic will provide complete psychiatric examination and treatment services to pupils of Anacostia High School and the Sousa and Kramer Junior High Schools whose parents cannot afford the expenses for such care. Staff members will donate their services. Pupils requiring specific study and treatment beyond the scope of the clinic will be referred to the appropriate public or private medical facilities. Drs. Addison M. Duval and Manson B. Pettit, both of St. Elizabeths Hospital, are the chief-of-staff and chief-of-service, respectively.

ILLINOIS

Society News.—The Illinois State Medical Society moved into its new quarters at Suite 801, 185 N. Wabash Ave., Chicago 1, May 24. The telephone number remains the same, FInancial 6-0443.

Personals.—Dr. Harry E. Mock Jr. of Evanston and Dr. William G. Hibbs of Chicago have been elected to the Franklin (Ind.) College board of directors. Dr. Mock replaces his father, Dr. Harry E. Mock Sr., who resigned after serving on the board for 22 years.

New Quarters for Graduate School.—The Cook County Graduate School of Medicine opened its new building at 707 South Wood Street June 12. The three story brick and limestone structure, erected at a cost of $500,000, is a private institution, founded by 18 physicians on the staff of the County Hospital in 1936. The facilities of the new building are more than twice as large as those formerly occupied by the school at 427 Honore Street, which were demolished in connection with the Congress Street Expressway Development.

An endowment of $100,000 for physicians who will study at the school was presented to Dr. Karl A. Meyer, medical superintendent of county institutions, by Mr. and Mrs. Joseph Regenstein of Chicago. According to Dr. Meyer, "these funds will be used for small town doctors with small incomes so that they may carry on with graduate work and be of more value to their communities." The school has a staff of 125, and will offer refresher courses.

Chicago

Dr. Bailey Honored.—Dr. Percival Bailey, professor of neurology and neurological surgery, University of Illinois College of Medicine, and director of the Illinois State Psychopathic Institute, was honored at a dinner given by former students and friends on his 60th birthday, May 30. Participants in the scientific program were Drs. James W. Watts, George Washington University School of Medicine, Washington, D. C.; A. Earl Walker, Johns Hopkins University School of Medicine, Baltimore; John R. Green, Phoenix, Ariz.; William H. Sweet, Harvard Medical School, Boston; William T. Peyton, University of Minnesota Medical School, Minneapolis; Paul M. Levin, Southwestern Medical School of the University of Texas; Luis V. Amador, University of Illinois College of Medicine; Francis Murphey, University of Tennessee College of Medicine, Memphis; Ralph B. Cloward, Honolulu, Hawaii; H. Russell Meyers, State University of Iowa, Iowa City; and F. Keith Bradford, Baylor University College of Medicine, Houston. At the dinner at the South Shore Country Club, Dr. Bailey received a bound volume containing a list of his activities and honors and the names and photographs of his former students. Speakers at the dinner were Dr. Eric Oldberg of the University of Illinois, Prof. Theophile A. Alajouanine of the University of Paris, and Prof. Georges Schaltenbrand of the University of Wurzburg.

KANSAS

University News.—Homer B. Latimer, Ph.D., professor of anatomy, Kansas University School of Medicine, Lawrence, was honored by a testimonial dinner at the Faculty Club before his retirement at the mandatory age of 70. Dr. Latimer has been in the department of anatomy for 26 years.

Society Election.—At the annual meeting of the Kansas Psychiatric Society Dr. William F. Roth Jr., Kansas City, was elected president; Dr. William Rottersman, Topeka, vice-president; Dr. John R. Adams, Topeka, secretary-treasurer; and Drs. Frank F. Merker, Topeka, and John A. Grimshaw, Topeka, councilors.

KENTUCKY

Dr. Horine Honored.—In honor of the 100th anniversary of the death of Dr. Daniel Drake, pioneer Kentucky physician and founder of the Medical College of Ohio (now the Medical College of the University of Cincinnati), Dr. Emmet F. Horine of Brooks, historian of the Kentucky State Medical Association, and Drake biographer, addressed the special meeting of the Cincinnati Academy of Medicine at the University of Cincinnati, May 27. His topic was "Cincinnatian Unique: Daniel Drake." The meeting was preceded by special exercises at Dr. Drake's grave, during which a new bronze marker was placed on the stone. At the Daniel Drake Day Convocation an honorary master of arts degree was conferred on Dr. Horine.

LOUISIANA

Dr. Carter Day Observed.—The town of Creole paid tribute on May 25 to Dr. Stephen O. Carter, who has served the residents of Cameron Parish for 60 years. A granite monument dedicated to Dr. Carter and paid for by public contributions was unveiled.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

Personals.—Dr. Alton Ochsner, chairman, department of surgery, Tulane University of Louisiana School of Medicine, New Orleans, has received honorary appointment as professor in the School of Medicine, Surgery, and Obstetrics, of the Universidad Nacional de Nicaragua.——Dr. B. Bernard Weinstein, associate professor of clinical gynecology at Tulane University of Louisiana School of Medicine, has been elected an honorary member of the Obstetrical and Gynecological Society of Peru.

MARYLAND

University News.—Dr. Henry W. Scott Jr., associate professor of surgery, Johns Hopkins Hospital, Baltimore, has been appointed professor of surgery, Vanderbilt University School of Medicine, Nashville, and surgeon-in-chief to the Vanderbilt University Hospital, Nashville, succeeding Dr. Barney Brooks, who will become professor emeritus.

MASSACHUSETTS

Society News.—The Norfolk District Medical Society has elected the following officers for 1952-1953: Dr. Thomas R. Goethals, Boston, president; Dr. David L. Halbersleben, Boston, vice-president; Dr. Solomon L. Skvirsky, Boston, secretary; and Dr. Archie A. Abrams, Brookline, treasurer.

Endocrinology Award.—At the annual meeting of the Endocrine Society in Chicago on June 6, the 1952 Squibb Award in Endocrinology was presented to Dr. James H. Means for pioneering work in the physiology, pathology, and metabolic functions of the thyroid gland. Dr. Means is Jackson Professor of Clinical Medicine (emeritus) at Harvard Medical School, Boston.

MICHIGAN

Cancer Control Award.—Dr. Frank L. Rector, secretary of the cancer control committee of the Michigan State Medical Society, has been awarded the first of the Public Health Cancer Association's awards for "meritorious services in the field of cancer control." The award will be presented at the annual meeting of the association in Cleveland in October.

Upper Peninsula Meeting.—The annual meeting of the Upper Peninsula Medical Society is being held at the Pine Grove Country Club, Iron Mountain, June 27-28, under the presidency of Dr. Donald R. Smith of Iron Mountain. Out-of-state speakers include:

Timothy R. Murphy, Milwaukee, Cardiac Catheterization in Selection of Patients for Mitral Valve Surgery.
William B. Seaman, St. Louis, Medical Uses of Radioactive Isotopes.
Carl A. Moyer, St. Louis, Treatment of Burns.
Grant H. Laing, Chicago, Gastrointestinal Allergies.
John L. Garvey, Milwaukee, Neurological Signs in Internal Medicine.
John A. Newkirk, Elgin, Ill., Internal Medicine.
Paul H. Garvey, Rochester, N. Y., Thyrotoxic Neuropathies.

On Friday noon at the luncheon meeting "Formula for Freedom" is scheduled for presentation by the Michigan State Medical Society. The sessions will conclude with a panel discussion on "Surgery of Trauma" at 4 p. m. Saturday.

NEW YORK

Society News.—The Medical Society of the State of New York has moved its offices to 386 Fourth Ave., New York 16. The phone number is MUrray Hill 3-0701.

Geriatrics Society Organized.—The Western New York Geriatrics Society was organized May 21 in Buffalo by 20 physicians, meeting in the University of Buffalo School of Medicine. Dr. David K. Miller, head of the department of medicine at Edward J. Meyer Memorial Hospital, was elected president. The activities of the society will embrace Allegany, Cattaraugus, Chatauqua, Erie, Genesee, Niagara, Orleans and Wyoming counties.

Two Cleft Palate Pilot Studies.—New York State has initiated two pilot studies to determine the needs of children born with cleft palates. Centers have been established at Mount Sinai Hospital, New York City, and at the Children's Hospital, Buffalo, where specialists will evaluate each case. The objectives of the studies are to provide diagnostic and consultation services as early as possible and to train personnel in related fields. Special grants for consultation and evaluation services have been made available to the two participating hospitals.

Awards and Prizes.—The Rochester Academy of Medicine announces awards for 1952 to Dr. Richard J. Brzustowicz, Rochester, Minn., for his paper "Combined Trigeminal and Glossopharyngeal Neuralgia"; to Mary Hauser, R.N., for the thesis "How Can the Professional Nurse Help in the Problem of Mental Retardation"; to Dr. Alvin L. Ureles, Boston, for his paper "Nodular Goiter and Thyroid Cancer"; and to Dr. Leonard K. Stalker, Rochester, for the paper "The Indurated and Ulcerated Leg." Each award included a prize of $100 and a certificate.

Another Hearing Center.—A hearing center for Nassau County, now being established, will function as a private institution and will be located at Nassau Hospital in Mineola, where space has been donated for the work. The facilities of this center will be available to children and adults with hearing defects in Nassau County, and will be free to those unable to pay. The services will include a test with the audiometer, tests with hearing aids, and information on purchasing a hearing aid. Lip reading and voice and speech training will be taught, and a child guidance program will include counseling for the parents, teachers, guardians, or others responsible for the child's care.

State Medical Appointments.—Drs. Henry Brill, director of Craig Colony, Sonyea, and Robert C. Hunt, director of St. Lawrence State Hospital, Ogdensburg, have been appointed assistant commissioners in the administrative offices of the department of mental hygiene in Albany. Dr. Brill has been affiliated with Pilgrim State Hospital, West Brentwood, L. I., and Southside Hospital, Bay Shore, and since June, 1950, has served as director of Craig Colony, state institution for epileptics. Dr. Hunt has been director of St. Lawrence State Hospital since March, 1950.

Dr. Charles Greenberg, assistant director at Harlem Valley State Hospital, Wingdale, will succeed Dr. Brill as director of Craig Colony, and Dr. George F. Etling, assistant director of Rome State School, will take over Dr. Hunt's former post. Dr. Duncan Whitehead, assistant director, Brooklyn State Hospital, has been named director of Buffalo State Hospital to fill the vacancy caused by the retirement of Dr. Christopher Fletcher.

Report on Mental Illness.—The state department of mental hygiene reports that less than half of all first admissions to mental hospitals in New York are still in the hospital at the end of the first year. Excluding those who died, 51% of all patients admitted for the first time were discharged within two years, usually after one year of convalescence in the community.

The New York report, based on a study by Benjamin Malzberg, Ph.D., director of statistics, department of mental hygiene, indicated that the chances of partial or total recovery from schizophrenia have more than tripled in 40 years. The rate of partial or total recovery for first admissions of patients with schizophrenia was slightly less than 17% in 1909. In 1949, the closing date of the study, it was 57%. This remarkable improvement in the treatment of schizophrenia in recent years was attributed largely to the introduction of the shock therapies.

New York statistics show that about 1% of all patients admitted for the first time are less than 15 years of age; 16% are between the ages of 15 and 29; and 45% are 60 or over. Thirty per cent of patients admitted for the first time to state mental hospitals each year have schizophrenia, and 37% have senile psychoses and cerebral arteriosclerosis. Involutional psychosis and alcoholic psychosis account for 7% and 6% respectively, while manic depressive psychosis and general paresis each make up another 2% of all first admissions.

Although the ratio of patients to civilian population was slightly more than 3 per 1,000 for the United States as a whole in 1949, the ratio for New York State (highest in the country) was 5.6 per 1,000.

New York City

Gibbs Prize Awarded.—Dr. John V. Taggart of the College of Physicians and Surgeons, Columbia University, has been awarded the Edward N. Gibbs Memorial Prize of $2,000 for researches on the etiology, pathology, physiology, or treatment of diseases of the kidney for his sudies on renal physiology and tubular transport mechanisms. The Gibbs Memorial Prize, awarded by the New York Academy of Medicine, was initiated in 1901.

Ciba Award. — Seymour Lieberman, Ph.D., assistant professor of biological chemistry, Columbia University, received the Ciba Award for 1952 at the annual dinner of the Endocrine Society in Chicago, June 7, in recognition of his work in identifying the steroid compounds isolated from urine. The award of $1,200 is presented each year by Ciba Pharmaceutical Products, Summit, N. J., to a member selected by the society for outstanding work in endocrinology. If the recipient of the award uses it within two years for further study in another laboratory, it is increased to $1,800.

Radio Programs.—The New York Academy of Medicine announces the following lectures for its postgraduate radio program, which is heard on Thursday from 9 to 10 p. m. over station WNYC-FM:

July 3, Advances in the Medical Management of Peptic Ulcer, Charles A. Flood.
July 10, Advances in Hematology, Paul Reznikoff.
July 17, Problems in the Approach to the Neuroses and Psychoses in General Practice, Lawrence S. Kubie.
July 24, Advances in the Treatment of Nonoperable Cancer, Lloyd F. Craver.
July 31, Advances in Drug Therapy, Alfred A. Gellhorn.

OREGON

Society News.—Dr. Gerhard B. Haugen, Portland, was elected president of the North Pacific Society of Neurology and Psychiatry at its annual meeting in Seattle, April 4-5.——At the annual meeting of the North Pacific Orthopedic Society in Seattle, May 16, Dr. A. Gurney Kimberley was elected president.

Personals.—Dr. Axel C. Osterholm, Portland, was recently awarded the rank of Chevalier of the Order of the Couronne by the Belgian government for "outstanding service to humanity." Dr. Osterholm is a medical missionary of the American Baptist convention in the Belgian Congo.——Dr. Charles E. Sears, Portland, was recently elected an honorary member of the Oregon State Medical Society "in recognition of his long and distinguished service to the society and to the medical profession." Dr. Sears is associate clinical professor of medicine, University of Oregon Medical School.

PENNSYLVANIA

Human Death from Rabies.—Dr. William D. Schrack Jr., Pennsylvania Department of Health, reports the death from rabies of a woman, who was bitten on the finger by a fox in her yard at home. The fox's head was sent to the state laboratory, which reported that the animal was rabid. Antirabies vaccine was given but about three weeks after being bitten, the patient died. Specimens of brain tissue obtained at autopsy showed Negri bodies.

Philadelphia

State Purchases Lankenau Hospital.—Gov. John S. Fine announces that the State of Pennsylvania has purchased the Lankenau Hospital and the Mary J. Drexel Home for Children in Philadelphia to provide additional facilities for tuberculosis patients. The transaction involves 24 buildings at Corinthian Ave., Girard Ave., and Poplar, and 24th Streets. When various changes are made in the building the capacity of the tuberculosis center will be 865 beds.

Personals.—Dr. A. Herbert Marbach delivered the annual Phi Delta Epsilon lecture at the Wayne University College of Medicine, Detroit, on May 22 on "Psychosomatic Implications of Infertility."——Dr. Abraham E. Colcher was recently chosen president-elect of the Association of Surgeons of the Pennsylvania Railroad.——Dr. Albert Warren Kitts has been named medical consultant for the National Foundation for Infantile Paralysis for the region comprising the states of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and West Virginia.——Dr. Albert P. Seltzer was awarded an honorary degree of Doctor of Laws at the commencement exercises of Shaw University, Raleigh, N. C.——Dr. Mildred C. J. Pfeiffer has been appointed director of the state health department's new division of cardiovascular diseases. Dr. Pfeiffer has been associated with the Woman's Medical College of Pennsylvania as director of oncology and assistant clinical professor of medicine.

TENNESSEE

Hospital Open House.—Physicians in the Memphis area are invited to attend Baptist Memorial Hospital's open house July 17, honoring members of the medical profession. Physicians who served internships or residencies at the hospital, regardless of their present location, are invited to return for this special event. A reunion luncheon is planned for July 17 as a feature of the week long celebration of the hospital's 40th anniversary. Dr. George V. Brindley, Temple, Texas, a past president of the Southern Surgical Association, will be guest speaker at the banquet that evening.

TEXAS

Postgraduate Assembly in Houston.—The Postgraduate Medical Assembly of South Texas will be held at the Shamrock Hotel in Houston, July 21-23. Three separate sections (medicine, surgery, and eye, ear, nose and throat) will meet daily from 9 a. m. to 6 p. m., and will hold joint luncheon meetings. Exhibits and motion pictures will be shown. There will be a dance Tuesday evening. Guest speakers include Drs. Walter C. Alvarez, James J. Callahan, and Francis L. Lederer, Chicago; John M. Chamberlain, Daniel B. Kirby, Victor F. Marshall, and James H. Wall, New York; Harry M. Weber, Rochester, Minn.; Arthur C. Curtis and John M. Sheldon, Ann Arbor; Walter A. Fansler, Minneapolis; George T. Harrell, Winston Salem, N. C.; Bernard J. Hanley, Los Angeles; Chevalier L. Jackson, Philadelphia; Charles A. Janeway and C. Stewart Welch, Boston; William B. Kountz, St. Louis; Albert N. Lemoine Jr., Kansas City, Kan.; and John L. Parks, Washington, D. C. Registration fee of $20 covers all features including luncheons. There is a reduced fee of $10 for physicians on active duty in the armed forces. For information, write the Postgraduate Medical Assembly of South Texas, 229 Medical Arts Building, Houston.

ALASKA

Crippled Children's Clinics.—Dr. Philip H. Moore, orthopedic surgeon of Mount Edgecumbe Hospital, Miss Elizabeth Bishop of the Alaska Department of Health, and Miss Mary Jerome, orthopedic supervisor of Mount Edgecumbe Hospital, held crippled children's clinics in 30 villages during 30 days in November and December of last year.

GENERAL

Award Fifty Opportunity Fellowships.—Fellowships totaling $100,000 were recently awarded to 50 members of minority groups, the John Hay Whitney Foundation announces. Outstanding young men and women from Guam, Hawaii, Alaska, the Virgin Islands, Puerto Rico, the District of Columbia, and 20 states received grants ranging from $1,000 to $3,000 to continue their training or pursue creative work.

Traffic Accident Report.—For the first four months of 1952, the National Safety Council reports an average traffic fatality increase of 1%, 10,650 deaths as compared with 10,510 in the same period last year. For the first four months of the year, 21 states had fewer deaths than a year ago. Of 523 cities reporting, 203 had perfect traffic records. The three largest were Des Moines (178,000), Fall River, Mass. (112,000), and Little Rock, Ark. (102,200); 160 cities had fewer deaths, 170 had increases, and 193 showed no change.

Poliomyelitis Report.—According to the U. S. Public Health Service, 145 cases of poliomyelitis were reported for the week ended May 24, as compared with 122 for the previous week. The corresponding figure for last year was 88 and the five year median, 102. Since the beginning of the week ended April 5 a total of 729 cases had been reported. Half of these cases (365) were in California and Texas. The corresponding total for last year was 562, and California and Texas reported less than a third (176) of these cases. While there had been a gradual increase in other states in the past few weeks, there was as yet no evidence of a localized concentration of cases.

Establish the Howard Blakeslee Award.—The American Heart Association has established the Howard W. Blakeslee Award to encourage high standards of medical reporting in the field of heart and blood vessel diseases. The award was named in honor of Mr. Blakeslee, science editor of the Associated Press, and a founder of the National Association of Science Writers, who recently died of heart disease. The award will be presented annually to the person whose creative efforts in any medium of mass communication, including press, magazine, radio, television, films, and books, contributes most to public understanding of cardiovascular diseases.

Society Elections.—At its annual meeting in Boston the American Trudeau Society elected Dr. David A. Cooper, Philadelphia, president; Dr. Donald S. King, Brookline, Mass., president-elect; Dr. William S. Schwartz, Oteen, N. C., vice-president; and Dr. John D. Steele, Milwaukee, secretary-treasurer.——At the annual meeting of the National Tuberculosis Association in Boston Dr. Sidney J. Shipman, San Francisco, was elected president; Mr. Mark H. Harrington, Denver, president-elect; Dr. Mario M. Fischer, Duluth, Minn., and Mr. Edward Fagan, Brooklyn, vice-presidents; Mr. Collier Platt, New York, treasurer; and Mr. Kemp D. Battle, Rocky Mount, N. C., secretary.

Survey of Physiology.—A study to determine the status of research and education in physiology, including an inventory of available scientists, facilities, and institutional and communication problems, and an appraisal of how research progress in physiology relates to other scientific fields and the national welfare, is being undertaken by the American Physiological Society under contract with the National Science Foundation. The pilot phase of the study is under the direction of a central committee appointed by the society and serving without compensation.

Orr E. Reynolds, Ph.D., on leave of absence from the Office of Naval Research, is executive director of the pilot project. Membership on the central committee comprises about 10 outstanding physiologists of the United States and Canada.

Prizes for Papers on Epilepsy.—The American League Against Epilepsy announces the Jerry Price Memorial Prizes, the joint contribution of Mr. and Mrs. Fred Markham and of the Committee for Public Understanding of Epilepsy. First prize will be $500, second prize, $250, and third prize, $150, and there will be five book prizes. The contest is open to students of approved medical schools in the United States and Canada. Any aspect of epilepsy may be covered, such as history, description, etiology, therapy, anatomy, neurophysiology, case reports, and social or psychologic aspects; or the work may involve original investigations. Dissertations should be less than 5,000 words in length, and should be sent before April 1, 1953, to one of the following committee members: Dr. William G. Lennox, 300 Longwood Ave., Boston; Dr. John L. Otto, 816 Strand, Galveston, Texas; or Dr. Francis L. McNaughton, 3801 University St., Montreal 2, Canada.

Hamilton Memorial Lecture and Award.—The American Psychopathological Association has established the Samuel W. Hamilton Memorial Lecture and Award in commemoration of the contribution made by Dr. Hamilton, one of the founders of the association, to psychiatry, medicine, and sociology. The recipient will be chosen each year by the Council of the American Psychopathological Association and presented with the Samuel W. Hamilton bronze medal after delivery of the Hamilton Lecture. Contributions received from members of the association and of the American Psychiatric Association who participated as sponsors will perpetuate the award. This year the first award was presented at the annual meeting of the American Psychopathological Association June 7 in New York to Dr. Clarence P. Oberndorf, clinical professor of psychiatry, Columbia University College of Physicians and Surgeons, New York. Dr. Oberndorf's lecture was entitled "Function in Psychiatry."

Booklet on Heart Disease.—The American Heart Association, cooperating with the National Heart Institute, has issued a booklet entitled "Diseases of the Heart and Blood Vessels—Facts and Figures," which attempts to answer questions about the incidence, the importance of sex and race, seasonal influences, and the most serious forms of heart disease.

Of the 745,000 deaths caused by diseases of the heart and blood vessels in 1950, the booklet reports, 90% resulted from arteriosclerosis and high blood pressure. More than 9 million persons in this country are estimated to have some form of cardiovascular-renal disease. During the past three decades, the risk of dying from diseases of the heart and circulation has decreased for persons under 45 years of age, although there has been little change for those over 45. Much of the decrease under 45 is accounted for by the fact that fewer persons are dying from rheumatic fever and rheumatic heart disease.

LATIN AMERICA

Society News.—For the biennium 1952-54, the Cuban Society of Neurology and Psychiatry has elected Dr. Carlos Manuel Ramírez Corría, president, Dr. Frisso Potts Rodríguez, secretary, Dr. Manuel Aranda Muñoz, corresponding secretary, and Dr. Gustavo Arias Alvariño, treasurer.

FOREIGN

Venereal Disease Control Appointments.—Dr. Olav Idsøe, Bergen, Norway, has been appointed head of the World Health Organization's Venereal Disease Advisory Team, which has been aiding the Egyptian Ministry of Health for the past year. Dr. Idsøe was a public health officer in Norway for five years before becoming director of the Leprosy Hospital for Seamen and then director of the venereal disease clinic in Bergen. Dr. Sven Ivar Christiansen of Denmark, who has spent 15 months in Afghanistan for the World Health Organization, has been transferred to Turkey to act as WHO consultant in venereal disease control.

Course in International Medical Law.—The first official university course in international medical law was recently inaugurated at the Faculté de Médecine of Bordeaux, France. The course, which will be given by Prof. Auby, of the Faculté de Droit, former Directeur du Cabinet du Ministre de la Santé Publique, is designed "to establish the privileged position which the physician should occupy from the international point of view, so as to be able to assure sufficient protection and effective aid to the victims of conflict." It will include discussions on medical morals and medical law; domestic and international medical law; international public health organization; development of an international statute for medicine; and international medical law in war and in peace.

Australasian Medical Congress.—The eighth session of the Australasian Medical Congress will be held Aug. 26-29 in Melbourne, Victoria, Australia, under the presidency of Sir John Newman-Morris. The meetings will open with a panel session on hypertension. Other subjects to be discussed will be clinical problems of the menopause, poliomyelitis, cortisone, and corticotropin (ACTH), infectious diseases, antibiotics, mass management of burns, medical care of the aged, diagnosis and treatment of chronic cough, and pruritus. The section on neurology and psychiatry will hold symposiums on epilepsy, sedative drugs, and alcoholism. The section on pediatrics will conduct symposiums on prematurity, acute abdominal pain in childhood, and the backward child.

There will be an exhibition of physicians' hobbies, and films will be shown daily. On Wednesday a special Air Force film, "The Medical Effects of the Atom Bomb," will be shown. For information, address the General Secretary, Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, C.2, Victoria, Australia.

MEETINGS

Alaska Territorial Medical Association, Anchorage, Aug. 21-23. Dr. William P. Blanton, P. O. Box 2569, Juneau, Secretary.

American Orthopedic Association, London, England, June 30-July 4. Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

National Medical Association, Chicago, Aug. 11-15. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

Nevada State Medical Association, Reno, Aug. 21-23. Dr. William A. O'Brien III, 505 Chestnut St., Reno, Secretary.

Post Graduate Medical Assembly of South Texas, Shamrock Hotel, Houston, July 21-23. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secretary.

Reno Surgical Society Conference, Reno, Nevada, Aug. 21-23. Dr. Olin C. Moulton, 130 N. Virginia St., Reno, Nevada, Chairman.

Rocky Mountain Cancer Conference, Shirley-Savoy Hotel, Denver, July 9-10. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver 2.

Rocky Mountain Radiological Society, Denver, Aug. 7-9. Dr. Maurice D. Frazer, 1037 Stuart Bldg., Lincoln, Neb., Secretary.

West Virginia State Medical Association, The Greenbrier, White Sulphur Springs, July 24-26. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

INTERNATIONAL

Australasian Medical Congress, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, General Secretary.

Commonwealth and Empire Health and Tuberculosis Conference, Central Hall, London, England, July 8-13. Dr. J. H. Harley Williams, Tavistock House North, Tavistock Sq., London, W.C.1, England, Secretary General.

Congress of the International Diabetes Federation, Leyden, Netherlands, July 7-12. Dr. F. Gerritzen, 33, Prinsegracht, The Hague, Netherlands, Secretary.

European Congress of Cardiology. University of London, Bloomsbury, W.C.1, England, Sept. 10-12. Dr. K. Shirley Smith, 35 Wimpole St., London, W.1, England, Secretary.

European Society of Cardiovascular Surgery, Strasbourg, France, Oct. 3-4. Sir James Learmonth, Department of Surgery, University New Buildings, Edinburgh 8, Scotland.

Interamerican Cardiological Congress, Buenos Aires, Argentina, Aug. 31-Sept. 7. Dr. Blas Moia, Larrea 1132, Buenos Aires, Argentina, Secretary-General.

Inter-American Congress of Public Health, Havana, Cuba. Sept. 27-Oct. 1. Pan-American Sanitary Bureau, 2001 Connecticut Ave., Washington, D. C.

Inter-American Congress of Radiology, Mexico City, Mexico, Nov. 2-8. Dr. Guido Torres Martinez, Marsella No. 11, Mexico, D.F., Secretary-General.

International Congress of Biochemistry, Paris, France, July 21-27. Prof. Jean Courtois, 4, Avenue de l'Observatoire, Paris 6^e, France, Secretary.

International Congress of Dermatology and Syphilology, London, England, July 21-26. Dr. Gordon B. Mitchell-Heggs, 5, Lisle St., London, W.C.2, England, General Secretary.

International Congress of Dietetics, Royal Tropical Institute, Amsterdam, The Netherlands, July 7-11. Miss Diane J. Ten Haaf, Educational Bureau of the Nutritional Council, 42 Koninginnegracht, The Hague, Netherlands, General Secretary.

International Congress on Diseases of the Chest, Rio de Janeiro, Brazil, Aug. 24-30. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

International Congress of Haematology, Mar del Plata, Argentina, Sept. 21-26. Dr. Carlos Reussi, Anchorena 1710, Buenos Aires, Argentina, Secretary.

International Congress of the History of Medicine, Nice-Cannes, France, and Monaco, Sept. 8-18. Dr. F. A. Sondervorst, 124 Avenue des Allies, Louvain, Belgium, Secretary-General.

International Congress on Hydatid Disease, Santiago, Chile, Nov. 21-24. Organizing Committee, P. O. Box 9183, Santiago, Chile.

International Congress of Internal Medicine, Friends House, London, N.W.1, Eng. Sept. 15-18. Sir Harold Boldero, 12 Pall Mall East, London, S.W.1, England, Secretary.

International Congress on Medical Records, London, England, Sept. 7-12. Miss Gwen Perkins, 120 C Street S.E., Washington, D. C., Chairman.

International Congress of Military Medicine and Pharmacy, Montevideo, Uruguay, March 1-7. Dirreccion General del Servico de Sanitad Militar, 8 de Octubre y Mariano Moreno, Montevideo, Uruguay, Secretariat of the Congress.

International Congress on Neuropathology, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

International Congress of Otorhinolaryngology, Amsterdam, Netherlands, June 8-15. Dr. W. H. Struben, J. J. Viottastraat 1, Amsterdam, Netherlands, Secretary.

International Congress of Physical Medicine, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

International Congress of Physiopathology of Animal Reproduction and Artificial Insemination, Copenhagen, Denmark, July 7-10. Prof. Ed. Sorensen, The Royal Veterinary and Agricultural College, Bülowsvej 13, Copenhagen V, Denmark.

International Congress of Urology, The Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 15-18. Dr. John A. Taylor, 2 East 54th St., New York, N. Y., U. S. A., Secretary-General.

International Hospital Congress, London, England, May 25-30. Capt. J. E. Stone, 10 Old Jewry, London, EC2, England, Hon. Secretary.

International Neurological Reunion, Paris, France, July 8-9. M. Jean Sigwald, 68 Boulevard de Courcelles, Paris 17e, France.

International Society of Geographic Pathology, Liège, Belgium, July 15-18. Dr. Fred C. Roulet, Habelstr. 24, Basel, Switzerland, Secretary General.

International Union Against Tuberculosis, Rio de Janeiro, Brazil, Aug. 24-27. Prof. Etienne Bernard, 66 Blvd. St. Michel, Paris 6e, France, Secretary-General.

Neuroradiologic Symposium, Stockholm, Sweden, Sept. 17-20. Docent Ake Lindbom, Symposium Neuroradiologicum, Serafimerlasarettet, Stockholm K., Sweden, Secretary.

World Federation of Mental Health, Brussels, Belgium, Aug. 25-Sept. 1.

World Medical Association, Athens, Greece, Oct. 12-16. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary General.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Part I,* September. All centers where there are five or more candidates. Exec. Sec., Dr. John P. Hubbard, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* Swampscott, Mass., Sept. 28-Oct. 1. Sec., Dr. C. B. Hickcox, 80 Seymour St., Hartford 15.

American Board of Dermatology and Syphilology: *Written.* Various Centers, September 1953. Final date for filing applications was May 1. All candidates are now required to take the written examination. *Oral.* Philadelphia, October 1953. Ex. Sec., Miss Janet Newkirk, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Various centers and overseas, Oct. 20. Closing date for the acceptance of applications for the written examination was May 1. *Oral.* San Francisco, September or October; New York City, November or December. Subspecialty: Exec. Sec.-Treas., Dr. William A. Werrell, 1 West Main Street, Madison 3.

American Board of Obstetrics and Gynecology: *Written.* Various Centers, Feb. 6, 1953. Final date for filing applications is Nov. 1. Sec., Dr. R. L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Written.* Various Centers, January 1953. Final date for filing applications is July 1. *Practical.* Chicago, Oct. 6-10 and New York City, June 6-10, 1953. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

American Board of Orthopaedic Surgery: The deadline for the receipt of applications for the 1953 Part II examinations is Aug. 15. Sec., Dr. Harold A. Sofield, 122 S. Michigan Ave., Chicago.

American Board of Pathology: *Written and Oral.* Pathologic Anatomy and Clinical Pathology examination. Chicago, Oct. 9-11. Sec., Dr. William B. Wartman, 303 E. Chicago Ave., Chicago 11.

American Board of Pediatrics: *Oral.* Chicago, Oct. 24-26; Boston, late November. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Preventive Medicine and Public Health: Cleveland, Oct. 18-20. Sec., Dr. E. L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Proctology: *Oral and Written.* Philadelphia, Sept. 27-28. Sec., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Psychiatry and Neurology: New York City, Dec. 15-16. Final date for filing applications is Sept. 15. Sec.-Treas., Dr. David A. Boyd, Jr., 102-110 Second Ave. S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Dec. 1-7. Final date for filing application was June 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers. October 1952. Final date for filing application is July 1. Sec., Dr. J. Stewart Rodman, 225 15th St., Philadelphia.

Board of Thoracic Surgery: *Written.* Various Centers, Sept. 5. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit 2.

DEATHS

West, Olin ⊕ of Nashville, Tenn., for many years Secretary and General Manager of the American Medical Association, and at the San Francisco session in 1946, chosen President-Elect, died June 20, aged 77.

Dr. West was born in Gadsden, Ala., July 12, 1874. He studied at Howard College in Birmingham, and was graduated from Vanderbilt University School of Medicine, Nashville, Tenn., in 1898. For 12 years, he practiced medicine in Nashville and was for 15 years a member of the faculty of the Vanderbilt University, first as an instructor and later as assistant and associate professor in chemistry. In 1910, Dr. West became director for the Rockefeller Sanitary Commission and International Health Board in Tennessee, where he conducted an intensive campaign against hookworm. He was secretary and executive officer of the Tennessee State Board of Health from 1918 until 1922, when he came to Chicago to serve as Field Secretary of the American Medical Association. In the same year, following the death of Dr. Alexander R. Craig, Dr. West was appointed Acting Secretary by the Board of Trustees; then in 1923 at the annual session he was elected Secretary of the Association by the House of Delegates. With the resignation in 1924 of Dr. George H. Simmons as Editor and General Manager, Dr. West continued in the position of Secretary and succeeded Dr. Simmons as General Manager, a position he held until April, 1946, when, on account of poor health, he retired and returned to Nashville to live. The American Medical Association, nevertheless, chose him President-Elect in July of the same year that he retired. Dr. West was unable to endure the travel required of the President-Elect, and in 1947 he resigned. During his early years in Tennessee, he had been for a time acting health officer of Davidson County, and president of the Middle Tennessee Medical Association. He was for many years secretary of the Tennessee State Medical Association and editor of its journal. The State Medical Society of Wisconsin in 1934 presented its gold seal to Dr. West for his inspiring assistance to the profession. In 1946 the Connecticut State Medical Society awarded him honorary membership. He was a member of the Institute of Medicine of Chicago, the Nashville Academy of Medicine, and Sigma Alpha Epsilon fraternity, as well as of the University Club of Chicago and the Flossmoor Country Club. Dr. West was well known and respected for his loyal devotion to medicine and for his genuine interest in his fellow man. However, he will be best remembered by many of his friends for his sympathetic understanding of the problems of others. His record of service to mankind is an enviable one, and may in part serve as a source of consolation to the bereaved members of his family.

OLIN WEST, M.D., 1874-1952

Hamilton, Buford Garvin ⊕ Richmond, Mo.; born in Blattsburg, April 27, 1881; Washington University School of Medicine, St. Louis, 1905; specialist certified by the American Board of Obstetrics and Gynecology; vice chairman, Section on Obstetrics, Gynecology and Abdominal Surgery, American Medical Association 1936-1937, 1939-1940; member and past president of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons; member of the Central Association of Obstetricians and Gynecologists; formerly vice president of the Kansas City Obstetrical and Gynecological Society; assistant professor of obstetrics and gynecology from 1930 to 1940, associate professor of obstetrics and gynecology from 1940 to 1948, professor of obstetrics and gynecology from 1948 to 1950, when he became emeritus clinical professor of gynecology and obstetrics at the University of Kansas School of Medicine, Kansas City, Kan.; served on the staffs of the Kansas City General, St. Luke's and St. Joseph's hospitals in Kansas City, Mo.; director, division of health, state division of public health and welfare, Jefferson City, died April 17, aged 70.

Mongan, Charles Edward, Somerville, Mass., born in Somerville in 1860; Harvard Medical School, Boston, 1892; member of the House of Delegates of the American Medical Association from 1921 through 1937 and from 1939 through 1944; past president of the Massachusetts Medical Society; member of the New England Obstetrical and Gynecological Society and served on its executive committee; fellow of the *American College of Surgeons;* surgeon, Somerville (Mass.) Hospital and Holy Ghost Hospital for Incurables in Cambridge; in addition to serving as director, vice-president, and vice-chairman of the board of the Somerville National Bank, he was a founder of the Central Cooperative Bank and its first president, and also was for many years a director of the Somerville Trust Company; died April 13, aged 92.

Austin, James Harold ⊕ Philadelphia; born in Philadelphia, Sept. 22, 1883; University of Pennsylvania Department of Medicine, *Philadelphia, 1908; specialist certified by the American Board of* Pathology; emeritus professor of research medicine at his alma mater and emeritus director of the Pepper Laboratory at the school; member of the Association of American Physicians, American Society for Clinical Investigation, American Association of Pathologists and Bacteriologists, and the College of American Pathologists; executive secretary of the College of Physicians of Philadelphia; served during World War I; died March 29, aged 68, of coronary occlusion.

Akester, Ward, Fergus Falls, Minn.; Medical College of Indiana, Indianapolis, 1902; served during World War I; formerly affiliated with Fergus Falls (Minn.) State Hospital and Mount Pleasant (Iowa) State Hospital; died in the Veterans Administration Hospital March 27, aged 71, of carcinoma.

Bailey, Harold, Charles City, Iowa; Rush Medical College, Chicago, 1897; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; veteran of the Spanish-American War; affiliated with Cedar Valley Hospital; died March 9, aged 77.

Barton, Harry Rozelle, St. Louis; Jefferson Medical College of Philadelphia, 1892; member of the American Medical Association; died recently, aged 82.

⊕ Indicates Fellow of the American Medical Association.

Bell, William McFadden ⊕ Detroit; University of Michigan Medical School, Ann Arbor, 1919; on the staff of Mount Carmel Mercy Hospital; died March 17, aged 59, of myocarditis.

Bennett, Mable Consuelo Finney ⊕ Berkeley, Calif.; Stanford University School of Medicine, San Francisco, 1920; affiliated with Children's Hospital of East Bay in Oakland and the Alta Bates and Herrick Memorial hospitals; died recently, aged 63, of cerebral hemorrhage.

Boice, Ralph Edwin ⊕ Toledo, Ohio; University of Michigan Medical School, Ann Arbor, 1920; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; affiliated with St. Vincent's Hospital and Toledo Hospital; died March 30, aged 56, of acute myocardial infarction.

Boyers, Lee Bernard, Fairmont, W. Va.; Maryland Medical College, Baltimore, 1900; past president of the Marion County Medical Society; died March 25, aged 72, of a heart attack.

Brown, Gates Monroe, Dayton, Iowa; Northwestern University Medical School, Chicago, 1899; member of the American Medical Association; died March 1, aged 79, of arteriosclerosis.

Buckner, Rufus Gaston, Montgomery, Ala.; Arkansas Industrial University Medical Department, Little Rock, 1897; died Feb. 6, aged 85, of coronary thrombosis.

Burke, James Walter, Chicago; Loyola University School of Medicine, Chicago, 1918; died in Franklin Park, Ill., recently, aged 63, of chronic myocarditis.

Chase, Charles Otis ⊕ Watertown, Mass.; Harvard Medical School, Boston, 1907; during World War I served in the medical department of the U. S. Navy and during World War II with the civilian defense unit; for many years on the staff of the Waltham Hospital, where he died March 19, aged 71, of embolism.

Clark, Charles Frazier, Lynwood, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; member of the American Medical Association and Missouri State Medical Association; died March 22, aged 76, of coronary thrombosis and arteriosclerosis.

Clark, George Armon, Brooklyn; Long Island College Hospital, Brooklyn, 1898; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with Harbor Hospital; died in Brooklyn Hospital March 28, aged 78, of carcinoma.

Clinton, Joseph Arthur, Newark, N. J.; Georgetown University School of Medicine, Washington, D. C., 1929; served during World War II; died March 31, aged 46, of coronary occlusion and asthma.

Cluthe, Walter J., Evansville, Ind.; Kentucky University Medical Department, Louisville, 1903; died in Welborn Memorial Baptist Hospital April 7, aged 70, of cardiovascular renal disease.

Crook, William Randolph, Elba, Ala.; Chattanooga (Tenn.) Medical College, 1901; member of the American Medical Association; died in Edge Hospital, Troy, Feb. 27, aged 72.

Davies, Harriet, Monroe, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; Welsh Presbyterian medical missionary in India for many years; died March 5, aged 73, of lymphosarcoma.

East, Samuel Todd, Liberty, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1903; member of the American Medical Association; died recently, aged 72, of pulmonary tuberculosis.

Eggers, Florence Ourat, Two Rivers, Wis.; Barnes Medical College, St. Louis, 1908 and 1909; died April 14, aged 78, of cerebral hemorrhage.

Fingerhut, Alec E., Cleveland; Eclectic Medical College, Cincinnati, 1916; affiliated with Glenville and Polyclinic hospitals; died in Cleveland Clinic Hospital March 20, aged 66, of general peritonitis and carcinoma.

Fletcher, William ⊕ Providence, R. I.; Harvard Medical School, Boston, 1900; died in Wickenburg, Ariz., recently, aged 74.

Gage, James Edgar ⊕ Utica, N. Y.; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1898; fellow of the American College of Surgeons; affiliated with Faxton Hospital; died March 1, aged 79, of coronary occlusion.

Garrett, Benjamin D., Kenova, W. Va.; Kentucky University Medical Department, Louisville, 1903; member of the American Medical Association; died in Huntington March 12, aged 75, of cerebral hemorrhage.

Gaynor, Hubert Edward ⊕ Parkersburg, W. Va.; Georgetown University School of Medicine, Washington, D. C., 1909; an Associate Fellow of the American Medical Association; formerly vice-president and secretary-treasurer of the Academy of Medicine of Parkersburg; served during World War I; for one term a member of the Public Health Council; died Feb. 28, aged 68, of coronary occlusion.

Gilkey, Henry M., Brookfield, Ohio; Keokuk Medical College, College of Physicians and Surgeons, 1903; died in Sharon (Pa.) General Hospital March 17, aged 81, of cerebral thrombosis.

Grekin, Samuel L. ⊕ Detroit; Detroit College of Medicine and Surgery, 1926; served during World War I; affiliated with Woman's Hospital, where he died March 1, aged 55, of coronary disease.

Hanawalt, Casper George, Champaign, Ill.; Rush Medical College, Chicago, 1897; died March 15, aged 85, of uremia.

Hansen, Oscar Jess ⊕ Redding, Calif.; College of Medical Evangelists, Loma Linda and Los Angeles, 1930; president of the Shasta County Medical Society; chairman of the board of trustees of the Redding Elementary School; served as county health officer; died March 7, aged 46, of cerebral thrombosis and hypertensive cardiovascular disease.

Herchenroeder, Louis Charles, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1896; St. Louis College of Physicians and Surgeons, 1902; served during World War I; died March 20, aged 80, of chronic myocarditis.

Hershey, Charles Owen ⊕ Chicago; University of Illinois College of Medicine, Chicago, 1922; died in Gulfport, Miss., recently, aged 64, of arteriosclerotic heart disease.

Hodapp, Robert Joseph ⊕ Willmar, Minn.; University of Minnesota Medical School, Minneapolis, 1920; president of the school board; member of the American Academy of General Practice; a director of the First National Bank of Willmar; died March 17, aged 60, of acute coronary thrombosis.

Hollander, Herbert Emil ⊕ New York; New York Homeopathic Medical College and Flower Hospital, New York, 1928; fellow of the American College of Surgeons; affiliated with Beth Israel, Flower and Fifth Avenue, Metropolitan, and New York City hospitals; served during World War I; died in Miami Beach, Fla., March 5, aged 54, of coronary thrombosis.

Hooper, Franklin Harrison, Lakewood, Ohio; University of Wooster Medical Department, Cleveland, 1914; member of the staffs of Lutheran and Fairview hospitals in Cleveland; died March 12, aged 62.

Ison, George Washington ⊕ Crandon, Wis.; University of Louisville (Ky.) Medical Department, 1913; died Feb. 13, aged 65, of coronary thrombosis.

Jordan, Cecil F., Denver, Ind.; University of Michigan Homeopathic Medical School, Ann Arbor, 1904; died March 15, aged 74, of coronary embolism.

Kahn, Robert, New York; University and Bellevue Hospital Medical College, New York, 1907; specialist certified by the American Board of Ophthalmology; affiliated with Goldwater Memorial Hospital, Montefiore Hospital for Chronic Diseases, Lying-In Hospital, and Willard Parker Hospital; died in Park West Hospital March 26, aged 67, of coronary thrombosis.

Kamplain, James, Oaktown, Ind.; St. Louis College of Physicians and Surgeons, 1891; died March 9, aged 90, of bronchopneumonia and influenza.

Lea, Joseph Marshall, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1906; member of the American Medical Association; affiliated with Knoxville General and Fort Sanders hospitals; died Feb. 22, aged 75, of coronary thrombosis.

Mapes, Reynolds J., Oakland, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; died March 28, aged 78, of cerebral thrombosis and cardiac decompensation.

Martin, Walter Simeon, Georgetown, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1921; died recently, aged 53, of cirrhosis of the liver.

Morgan, Charles Edwin ⊕ Mattoon, Ill.; Northwestern University Medical School, Chicago, 1902; past president of the Illinois Radiological Society; member of the Radiological Society of North America; affiliated with Memorial Methodist Hospital, where he died recently, aged 82, of coronary occlusion.

Murphy, James Orvil ⊕ Aurora, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, Chicago, 1909; served as city health commissioner; medical examiner for the Burlington Railroad; affiliated with Copley Memorial, St. Charles, and St. Joseph Mercy hospitals; died March 10, aged 69, of coronary thrombosis.

Naugle, Raymond Andrew ⊕ Wabash, Ind.; Indiana University School of Medicine, Indianapolis, 1920; died in Chicago Memorial Hospital March 21 aged 56, of brain tumor.

Nesbit, Otis Burgess, Gary, Ind.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1902; also a graduate in pharmacy; member of the American Medical Association; instrumental in the founding of the Parramore Hospital in Crown Point; physician for the city public school system for many years; fellow of the American College of Physicians; at one time practiced in Valparaiso, where he was president of the board of health; died in the University Hospital, Ann Arbor, March 18, aged 81, of coronary occlusion.

Pennell, Howard Yarnall ⊕ West Chester, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; member of the American Roentgen Ray Society; on the board of managers of the Elwyn (Pa.) Training School; affiliated with Chester County Hospital, where he died March 30, aged 77, of carcinoma of the urinary bladder.

Potts, Robert M., Fort Mill, S. C.; University of Maryland School of Medicine, Baltimore, 1896; died in Charlotte, N. C., Feb. 9, aged 80, of embolism and phlebitis of the right leg.

Powers, John Alexander, Harrison, Ark.; University Medical College of Kansas City, Mo., 1908; member of the American Medical Association and the Missouri State Medical Association; past president of the Johnson County (Mo.) Medical Society; served during World War I; died March 14, aged 65, of cerebral hemorrhage, influenza, and asthma.

Prendergast, Harold Joseph ⊕ St. Paul; University of Minnesota Medical School, Minneapolis, 1923; died at Mounds View Township, Minn., Feb. 22, aged 54, of myocardial failure and coronary occlusion.

Presnell, James Frederick ⊕ Major, U. S. Army, retired, Los Angeles; State University of Iowa College of Medicine, Iowa City, 1889; veteran of the Spanish-American War; served during World War I; entered the Medical Corps of the U. S. Army in 1920 and retired in March, 1931; for many years affiliated with Hollywood Presbyterian Hospital; died in Veterans Administration Hospital March 1, aged 84, of bronchopneumonia.

Rapp, Harry Floyd ⊕ Portsmouth, Ohio; Ohio-Miami Medical College of the University of Cincinnati, 1911; member of the American College of Chest Physicians; served during World War I; on the staff of the Mercy Hospital; died in the University Hospital, Columbus, March 28, aged 64, of chronic lymphatic leukemia.

Robbins, Douglas Ford, Minneapolis; University of Illinois College of Medicine, Chicago, 1914; served during World War I; died recently, aged 66, of coronary disease.

Roemmert, George, New York; Ludwig-Maximilians-Universität Medizinische Fakultät, München, Bavaria, Germany, 1923; originated the "micro-vivarium," which magnifies scenes of life in a drop of water; died in the Columbia-Presbyterian Medical Center March 12, aged 59, of mesothelioma of the pleura and lungs.

Rondeau, Leo Garrigan ⊕ Boston; Tufts College Medical School, Boston, 1920; on the staff of St. Elizabeth's Hospital; served during World War I; died March 19, aged 58, of coronary occlusion.

Ross, Albert Howard, Eugene, Ore.; American Medical Missionary College, Battle Creek, Mich., and Chicago, 1905; University of Pennsylvania School of Medicine, Philadelphia, 1911; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the North Pacific Society of Internal Medicine; affiliated with Sacred Heart General Hospital; died recently, aged 73.

Runnerstrom, George Elmer, Yucaipa, Calif.; University of Minnesota Medical School, Minneapolis, 1919; at one time practiced in Minneapolis, where he was on the staff of Veterans Administration Hospital; died in Loma Linda (Calif.) Hospital recently, aged 60, of cerebral thrombosis.

Russell, Joseph Weston, Chicago; College of Medicine and Surgery (Physio-Medical) Chicago, 1904; member of the American Medical Association; on the staff of the South Shore Hospital, where he died March 19, aged 76, of coronary sclerosis.

Sanborn, Charles Frye, Los Angeles; University of the City of New York Medical Department, 1893; served with the U. S. Public Health Service Reserve; died March 12, aged 79, of bronchopneumonia following a fracture of the neck of the right femur due to a fall.

Schultz, Edwin Maurice, Middletown, N. Y.; born in Athens, Pa., Nov. 7, 1866; New York Homeopathic Medical College and Hospital, New York, 1895; member of the American Medical Association; secretary of the Orange County Medical Society in 1913 and president in 1915; served during the Spanish-American War, Mexican War and World War I; for many years examiner for the Erie Railroad Company; on the staff of the Horton Memorial Hospital; died March 30, aged 85, of arteriosclerotic heart disease.

Scott, John Calvin ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1906; also a graduate in pharmacy; professor of physiology at Hahnemann Medical College and Hospital; for many years professor of physiology and hygiene at Temple University School of Medicine and professor of physiology and pharmacology at Temple University Dental School; affiliated with Northeastern Hospital; died April 3, aged 74, of cerebral thrombosis.

Shahovitch, Gladys Emilia Patric, Los Angeles; College of Physicians and Surgeons, Los Angeles, 1912; formerly assistant professor of diseases of the chest, College of Medical Evangelists; during World War I physician with the American Red Cross in Europe; for many years physician and surgeon for the city board of education; died March 25, aged 66, of carcinoma of the breast.

Sheffield, Hiram Clifton ⊕ Jackson, Miss.; University of Tennessee College of Medicine, Memphis, 1915; served as president of the Lauderdale County Medical Society and vice president of the Mississippi State Medical Association; died March 3, aged 63, of pulmonary infarction.

Shusterman, Harry L., Philadelphia; Temple University School of Medicine, Philadelphia, 1928; member of the American Medical Association; on the staff of the Albert Einstein Medical Center, where he died March 5, aged 49, of hypertensive cardiovascular disease.

Simon, Felix Edward, New York; University of Chicago School of Medicine, 1942; served during World War II; died March 20, aged 40.

Simons, James Daniel, Leon, Iowa; State University of Iowa College of Medicine, Iowa City, 1910; member of the American Medical Association; served during World War I; died March 12, aged 66, of cardiac decompensation.

Spellman, Frank Jackson, Alexandria, La.; Howard University College of Medicine, Washington, D. C., 1909; died March 23, aged 74, of congestive heart failure.

White, Harriet Marion, Richmond Hill, N. Y.; Cornell University Medical College, New York, 1923; certified by the National Board of Medical Examiners; died March 19, aged 58.

GOVERNMENT SERVICES

ARMY

Meeting of Advisory Board of Medical Consultants.—Six members of the advisory board of the Society of U. S. Medical Consultants in World War II met with Maj. Gen. George E. Armstrong, the Surgeon General and members of his staff June 7 in the Surgeon General's Office in Washington. After opening remarks by Dr. Grover C. Penberthy of Detroit, president of the society, General Armstrong talked on the status and problems of the Army Medical Service. His presentation was followed by reports from the chairmen of consultants' committees responsible for the Zone of the Interior, overseas areas, public information, personnel, preventive medicine, psychiatry, and training. Col. Harold W. Glattly, chief, personnel division, Surgeon General's Office, presented a detailed chart showing Army requirements for physicians in the coming months.

New Assignments for Four General Officers.—Maj. Gen. Arthur R. Gaines (MC), who for more than three years has served as commanding general of Brooke Army Hospital, Fort Sam Houston, Texas, is being retired from the Army. A veteran of 35 years service, General Gaines entered the Army Medical Department during World War I. He served in France with the American Expeditionary Force. During World War II he became commanding officer of several of the Army's leading hospitals and in 1946 went to Manila, Phillipine Islands, where he commanded the 10th General Hospital at Fort McKinley. General Gaines will be replaced by Brig. Gen. Martin E. Griffin (MC), who previously served as commanding officer of Percy Jones Army Hospital, Battle Creek, Mich.

Another officer recently assigned to Brooke Army Hospital is Maj. Gen. George W. Rice (MC), chief health officer of the Panama Canal Zone. General Rice will serve at the Army Medical Center pending retirement from the service. He will be replaced in the Canal Zone by Brig. Gen. Don Longfellow (MC), who was recently on duty at Walter Reed Army Medical Center, Washington, D. C.

NAVY

Course in Malariology and Amphibious Medicine.—A two-week course in malariology and insect control will convene on the first and third Wednesday of each month at the Naval Air Station, Jacksonville, Fla., during July, August, and September. Volunteer Naval Reserve Medical Corps, Medical Service Corps, and Hospital Corps officers in the 1st, 3rd, 4th, 5th, 6th, 8th, and 9th Naval Districts may attend in a pay status by requesting active duty training orders from the commandants of their districts.

The purpose is to provide information to be employed in insect control. Classroom studies and practical field problems will be given. The working uniform is khaki, but it is desirable that officers attending have a dress uniform and civilian clothes available while on this training duty. Meals and sleeping quarters are available.

A two-week course in amphibious medicine will convene July 7 for inactive Volunteer Naval Reserve Medical Department officers at the Amphibious Base, Little Creek, Va. This course consists of lectures, training films, demonstrations, and practical exercises. Embarkation, underway, and debarkation phases of the medical services are dealt with, and medical supply problems are presented.

Inactive Volunteer Reserve Medical Corps, Medical Service Corps, and Hospital Corps officers who reside in the 1st, 3rd, 4th, 5th, 6th, 8th and 9th Naval Districts and the Potomac River Naval Command may attend on active duty training orders in a pay status by requesting the training duty from the commandant of their naval district. Officers requesting this instruction should provide themselves with fatigue or utility type uniform equipment for participation in the practical aspects of the course.

Personals.—Rear Adm. Winfred P. Dana (MC) has reported to the Bureau of Medicine and Surgery and been assigned as the assistant chief of the Bureau for Aviation and Operational Medicine. Admiral Dana assumes the duties of the offices vacated by the reassignment of Rear Adm. Bertram Groesbeck Jr., to command the Naval Medical Center, Bethesda, Md.——Capt. Langdon C. Newman (MC) has reported to the Bureau of Medicine and Surgery as director of the Aviation Medicine Division. Captain Newman has assumed the duties of the office vacated by Capt. James L. Holland (MC), who was recently reassigned to command the Naval School of Aviation Medicine, Pensacola, Fla.

PUBLIC HEALTH SERVICE

Meningitis Epidemic in Africa.—Dr. William H. Clark, epidemiologist, has returned after a month in Anglo-Egyptian Sudan, Africa, where he assisted local health authorities in studying an epidemic of meningitis. Dr. Clark was on loan to the World Health Organization for this mission. Meningitis is said to have been responsible for 500,000 cases and thousands of deaths in Africa in the last 10 years. The reported incidence rose from 6,000 cases in 1950 to 57,000 in 1951, and there is no sign that it is abating.

Dr. Clark joined the Commissioned Corps of the Public Health Service in 1951; previously he was attached to the viral and rickettsial disease laboratory of the California State Health Department.

Mission to Aid Iraq.—Dr. Glenn Usher has been named chief of a health section to be established as part of the TCA (Point Four) Mission in Iraq. He is now in Bagdad to confer with Dr. Hadi Al-Pakachi, Director General of Health for Iraq, to determine the number and type of professional health workers that will be required to train local health personnel and to place the cooperative health program in operation. A tentative program for the health section provides for development of rural programs of insect vector control, endemic disease control, and the development of pure water supplies and improved sanitation. Dr. Usher joined the Commissioned Corps of the Public Health Service in 1938.

DEPARTMENT OF DEFENSE

Committee to Integrate Basic Research Programs.—The Department of the Army announced May 29 the establishment of an Army Research Committee to coordinate the large amount of basic research conducted or sponsored by the Army. The committee will advise the chief of research and development and the assistant chiefs of staff in the overall planning, coordination, and supervision of the basic research program. It will also make recommendations on matters of policy, procedure, and programming of basic research.

Chairman of the committee is Lloyd E. Swearingen, Ph.D., chief of the basic sciences section in the office of the assistant chief of staff for logistics. Committee members are representatives of the other offices of the general staff and each of the technical services of the Army. The chief of research and development, Maj. Gen. K. D. Nichols, is the director of the research and development program.

Personal.—Dr. Melvin A. Casberg, chairman, Armed Forces Medical Policy Council, Office of the Secretary of Defense, addressed the annual scientific meeting of the Homer G. Phillips Hospital Internes Alumni Association in St. Louis, in May. The Homer G. Phillips Hospital is one of the largest hospitals that affords training in the medical specialities to Negro physicians. Dr. Casberg spoke on "The Art of Medicine."

FOREIGN LETTERS

ARGENTINA

Overcrowding in Medical Schools.—Overcrowding in medical schools is a very serious problem in Latin America. With a large excess of students the practical teaching in all courses is becoming less emphasized. For the first time there is an enrollment of more than 3,000 students in the first year of the Medical School of Buenos Aires, the largest of the six medical schools of the Argentine Republic.

Insulin Plant.—In 1922 insulin was prepared in the laboratories of the National Department of Health by Dr. Alfredo Sordelli. Later the production was under the direction of Dr. R. Wernicke, F. Modern, and J. Mendive. At the same time, insulin was produced by private commercial institutions, such as Instituto Massone (now closed and expropriated by the government) and by Farmaco Argentina. This production was very large during the war, and the crystallized insulin was sent to Europe and many countries of South America. After the war it was difficult to obtain pancreas and industrial equipment, and the production has been insufficient to fulfill the needs of the country. The frozen pancreas was sent to the United States and Europe. The Ministry of Public Health has announced that the Armour Laboratories, of Chicago, is building an important plant for the production of insulin. The plan is to produce insulin for the 70,000 or more estimated diabetes victims of the country and also for the exportation of 70% of the production.

Treatment of Tuberculosis.—Excessive publicizing of new pharmaceutical products and treatment is becoming very common. The Ministry of Public Health has announced that it will put at the disposition of recognized specialists in tuberculosis "nicotibin," hydrazide of nicotinic acid. The supervision of the research was given to the National Commission of Antibiotics and the National Antituberculosis Service. The substance is produced here or furnished by Lepetit (Maitland), Roche (Basel), and Squibb (New Brunswick).

BOLIVIA

Revolutions in Bolivia.—During her 127 year existence, the Republic of Bolivia has had many riots, revolutions, and changes of government, and it is estimated that as many as 205 politico-social disturbances have occurred, including about 10 revolutions in which dozens of lives were lost. But it seems that none had the bloody proportions of the last one of April 9-12, 1952, in which there were three days of bitter fighting inside La Paz, with a tremendous display of pistols, rifles, light and heavy machine guns, grenades, mortars, cannon, and even a few airborne bombs. Many small houses were destroyed and many buildings damaged, such as the new Children's Hospital, the Military Hospital, and the Stadium. About 500 persons died; 800 were wounded. Figures for the one day fight in Oruro are still unknown.

The hospitals and clinics were unable to accommodate the large number of casualties; therefore, some schools were improvised. Surgical operations were performed only during the first day, because thereafter electric power was cut off as well as telephone service. Since all the streets were converted into fighting camps and no telephone communications were available, the staffs of the hospitals could not ask for outside help from other physicians. One physician in the General Hospital was seriously injured. A nurse was shot to death while riding in an ambulance, and another nurse was injured in a hospital. Antibiotics and first aid surgical material became exhausted quickly.

Fortunately, the governments of Argentina, Brazil, Chile, and Venezuela sent physicians, nurses, and social welfare workers, plus medical supplies; Colombia and the American Red Cross sent medical supplies and antibiotics. Argentina rushed four airplanes with the above-mentioned material plus food and clothing. The United Nations, through the World Health Organization, sent Dr. Glismann from the Lima office to see whether more aid was needed. Finally, the Argentine delegation sent some 20 badly wounded persons by airplane to the hospitals of Buenos Aires.

As a consequence of the revolution, Col. Valentín Gomez, Minister of Health, was replaced by Dr. Julio Ml. Aramayo, an obstetrician, and Dr. Néstor Orihuela, Director General of Health, has been replaced by Dr. Jorge Suarez, a leprologist.

Malnutrition Among Army Recruits.—During the celebration of World Health Day organized by the Rotary Club of La Paz, Dr. Carlos Ferrufino presented a paper entitled "Condiciones de Salud de los Reclutas del Ejército de Bolivia" (Health Condition of the Bolivian Army Recruits). According to the paper, a considerable percentage of the recruits were classified as unfit by the army. (No exact figures were disclosed because of army regulations.) The study of this group of recruits showed that 31.74% of them were rejected because they did not meet the minimum standards of weight and height or because of a poor physical condition without any apparent disease. The writer's opinion is that all those cases were due mostly to malnutrition from early infancy. Dr. Ferrufino asked for a coordinated health program of the government and the other health organizations in order to improve general health in Bolivia.

ISRAEL

Increase of Typhoid, Diphtheria, and Typhus Cases.—Sharp increases in the number of diphtheria, typhus, and typhoid cases in 1951 were reported by the health ministry in Jerusalem. Simultaneously, it announced a mass immunization program for the coming year and issued an urgent call for public vigilance on matters of sanitation. Last year's cases of diphtheria numbered 2,445 as compared with 1,664 in 1950. Typhus increased from 522 cases in 1950 to 788 in 1951. Incidence of typhoid rose from 714 in 1950 to 861 in 1951.

The increase in cases of typhoid, which, like those of dysentery, did not last year reflect the normal seasonal decrease in the winter, was explained by the ministry in terms of the great immigration from countries with low hygienic standards, the difficult housing conditions, and the shortage in sewage pipes. The great increase in cases of diphtheria was attributed to the withholding of preventive inoculations, since it was suspected that such injections might be an encouraging factor in contracting poliomyelitis. The ministry is now convinced of the necessity for a rapidly expanding diphtheria immunization program and intends to include every child up to 12 years of age in its campaign.

Deterioration of Nutrition.—A warning that the deteriorating standard of nutrition is inherently dangerous was issued by the central committee of the Israel Medical Association at a press conference in Jerusalem in March, 1952. Discussing the problem of nutrition, Drs. Z. Avigdori, Y. Katzenellenbogen, and A. Druyan declared that the government promise to maintain a supply of basic commodities had not been kept. They admitted that no nutritional ailments had been recorded recently but added that in time the results of the present deficiencies will become apparent.

Sharp Decrease of Poliomyelitis in 1951.—Poliomyelitis in Israel showed a marked decline in 1951. Only 917 cases were recorded last year, as compared with 1,600 the year before; during this period the population increased by more than 200,000 persons. The incidence of poliomyelitis was highest in the summer. In 1950, it reached 904 cases in May, June, and July, and in the same period last year there were 346 cases. A sharp decline took place in winter. Though the winter decline was strik-

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The items in these letters are contributed by regular correspondents in the various foreign countries.

ing in 1950, with a total of 159 cases in October, November, and December, the seasonal decline this winter was less pronounced, with 269 cases. This is a high winter figure in comparison with that of other countries. There have been no special focal points for acute anterior poliomyelitis here. Early in 1949, entire areas, including Galilee, reported no cases of the disease. More recently, however, cases have occurred throughout most of the Jewish areas of the country. Arab sections have, except for isolated cases, remained untouched. Although no final conclusions can yet be drawn as to the manner of the disease's spread, there is undoubtedly a relation between incidence of poliomyelitis and the sanitary conditions of the persons and their environment.

Medical Training for New Students.—The state of Israel requires at least 160 new physicians every year, and ways of increasing the number of students in the medical faculty of the Hebrew University must be examined to this end. This statement was recently made by Dr. A. Rieger, director general of the Ministry of Education and Culture, when he was speaking about the development of the medical faculty of the university. The educational level of the medical school is high, he said, and the shortage of foreign currency is another reason for increasing the number of students at the school. Dr. Rieger further proposed that a considerable number of students be recalled from abroad and entered in the faculty in Israel.

Incidence of Diabetes Mellitus.—A statistical evaluation by J. Seide, Haifa, of data from the food rationing authorities, concerning the populations of Tel Aviv, Jaffa, Haifa, and Jerusalem, shows that among the town dwellers of Israel the incidence of diabetes mellitus is 0.83%.

Distribution of Diabetes Mellitus on Jan. 1, 1951, in the Three Main Cities of Israel

Town	No. of Inhabitants	No. of Persons with Diabetes Mellitus	% of Cases of Diabetes Mellitus
Tel Aviv, Jaffa	329,193	3,300	1.00
Haifa	176,731	1,173	0.66
Jerusalem	123,252	760	0.61
Total	629,176	5,233	0.83

Taking for granted that the rural population has fewer cases of diabetes mellitus than the urban (because of a higher proportion of younger age groups or from other causes), it appears that the ratio for the entire country is lower than in other countries. According to American sources, known patients with diabetes mellitus comprise 0.71% of the population of the United States, and there are an estimated million persons in addition to this number who are believed to have the disease. It may be safely concluded that the number of persons suffering from diabetes mellitus in Israel is, on the average, no higher than in other civilized countries. Nothing confirms the opinion that the tendency of Jews to contract the disease is two to four times higher than in other races, as is often stated in textbooks.

Medical Center Site.—The new Hebrew University-Hadassah Medical Centre will be constructed on a ridge of hills west of Ein Karem, south of Jerusalem, if the site already approved by the Hadassah Medical Organization and the medical school faculty is confirmed by the Hebrew University Senate. The three year building project will be launched within a few months.

Originally recommended by the government, the proposed area was approved by the 26 member medical school faculty, with only one opposing vote. The 2,000 dunam government-owned plot, which Hadassah would like to view as the University City, an attitude that coincides with the government's position, is known to be the object of considerable opposition within the university. Citing the distance from the city, the plot is stated to be about 10 km. from the capitol's present limits, certain university circles have voiced their preference for a more centrally located site. Supporters of the location point to its beauty and to the expected development of Jerusalem in this direction, which is, in part, already under way. They note that the proximity of the railroad plus an increased bus service would make the distance from the city almost negligible.

A ministerial committee appointed to consider the needs of the university is understood to be studying the project with an eye to possible government participation. Present plans call for the construction of an up-to-date medical center, complete with hospital, medical and nursing schools, research laboratories, clinics, an auditorium, student dormitories, and residences for medical center personnel. A significant portion of the estimated $7,500,000 cost of the 450 bed hospital has already been raised. The preliminary plans for the hospital, drawn up by Mr. A. Neufield, have been approved by Hadassah and the medical school faculty.

Drop in Infant Mortality Rate.—The infant mortality rate in Israel has dropped during the past few years. The mortality rate reached its peak in 1949, when, because of the sudden mass immigration, it rose to 58 per thousand babies. In 1947, the figure was 28 per thousand. In 1950, however, the rate dropped to 46 per thousand, and, although no final figure is yet available for this year, the decrease is continuing.

PARIS

Effect of Colchicine in Allergic Diseases.—A. Mugler, A. Wackenheim, and J. Grappe have studied since 1949, in the medical clinic of Prof. Julien Warter at Strasbourg, the action of colchicine administered intravenously in allergic diseases. They presented new cases to the Medical Society of the Paris Hospitals, among which were urticaria due to sensitivity to corticotropin (ACTH), serum reactions, and post-transfusional urticaria. A typical case was a 42-year-old patient who had been treated with four injections of 25 mg. of corticotropin per day for hemorrhagic rectocolitis. Pruriginous urticarial patches appeared after each injection, specially on the anterior part of the thorax, and which, if untreated, persisted till the next injection. An intravenous injection of colchicine relieved the pruritus within five minutes, and urticaria completely disappeared within the following half hour. The action of colchicine was most spectacular on serum reactions, which occurred despite daily injections of calcium and the administration of synthetic antihistaminics.

In normal subjects slight rises of arterial blood pressure occur within 5 to 20 minutes after the injection of 3 mg. of colchicine. In cases of autonomic unbalance, a toxic diffuse goiter, and allergy, slight hypotension sets in, but in one case of hypotension following serum shock the injection of 3.5 cc. of colchicine brought about a prompt rise of arterial blood pressure. As a rule, the pulse accelerates after the injection and then slows down by about 10 pulsations per minute. Normal subjects react by transient slight hypoglycemia, and allergic patients, either by hypoglycemia or hyperglycemia. A sudden fall of the eosinophil level is also noted after an injection of colchicine. The authors explain some biologic actions of colchicine by an adrenaline discharge.

Conferences.—A conference on adaptation diseases will take place from May 29 to June 4, 1952, at the Laennec Hospital, under the patronage of Prof. Léon Binet, dean of the Paris faculty. Prof. H. Selye, director of the Montreal Experimental Institute, will deliver a lecture on the general syndrome of adaptation and the study of its clinical consequences. A series of conferences on adaptation diseases will be made by prominent lecturers. The registration fee is 5,000 fr. and should be paid to the secretarial office of Dr. Albeaux-Fernet, Laennec Hospital, Paris.——The World Congress for Sporting Medicine will be held from May 30 to June 1, 1952, at the Sorbonne in Paris under the presidency of Professor Chaillet-Bert. Several reports will be read, among which will be: Prof. Merle d'Aubigné on the surgical and nonsurgical treatment of trauma of the knee; Drs. Encausse, Mathieu, and Richard on the organization of medical control of sport organizations in France; and Professor Selye on the adaptation syndrome in regard to sports. Apply to Dr. Collet, Comite National des Sports, 4, rue d'Argenson, Paris (80).

CORRESPONDENCE

HOOKWORM DISEASE IN THE PARAGUAYAN CHACO

To the Editor:—During my medical work in the Paraguayan Gran Chaco from 1946 to 1948, human hookworm infection was the major debilitating disease. While hookworm was found in the native Paraguayan Indians in 1926, their superstitions and nescient habits prevented me from investigating this group. Considering their habitude, one would surmise that all should be infected. Surprisingly, however, on examination of a few of these Indians, a small percentage were found free of this infection.

My work was concerned with Swiss-Dutch emigrees who, in the 1920's and 1930's, settled in the Chaco about 150 miles west of Puerto Casada, on the Paraguay River. The area involved is about 30 miles north of the Tropic of Capricorn and 150 miles west of the Paraguay River. This region receives an average annual rainfall of 28 inches. The temperature varies from 30 F in the winter to 110 F in the summer. Its typical terrain consists of large and small irregularly shaped *campos* and *montes* overgrown with tough bush, coarse grass, and heavy hardwood trees. The soil is sandy in the *campos*, which are depressed areas of sometimes only a few inches. On the *monte* the soil is black, loamy clay, very productive of sturdy crops, such as cotton, grain, milo, and mandioca, while watermelons, peanuts, and similar crops grow well in the *campos*. South of the Tropic of Capricorn, the *campos* and *montes* merge into a pampa-like terrain still covered with trees and bush.

Two series of investigations were made. The first consisted of examinations for hookworm disease in all patients who came to the Chaco Hospital Bethesda during January, February, and March of 1947. No case was considered unless hookworm eggs were found in the stool. No attempt to classify the Ancylostoma was made; however, during the 18 month period, four cases of "creeping eruption" (Larvae migrans) were encountered.

Of 1,556 patients examined, 856 (55%) were infected with hookworm. Of eight age groups the incidence of infection was highest in the age group of 21 to 25 years, in which 90% of 116 patients examined were infected. Sixty-nine per cent of all the cases fell in the mildly infected group, in which fewer than three hookworm eggs were found in the examined stool. These results are probably not representative of the total population, as the brine flotation technique was used to establish the diagnosis and severity of the infection. This technique is less accurate but easier and faster to use than the Stoll or Lane technique. Of the 856 positive cases, 461 were male patients, 395 female. The men and boys go barefoot more than the women do. Almost all adult colonists wear shoes on Sunday, but during the week they go barefoot or wear open sandals. This is particularly true when the soil is moist.

The second series of investigations was undertaken during November, 1947, when a house-to-house canvass was made of 16 villages and one small town. The whole population was examined for hookworm eggs. Of 1,622 persons examined, representing 287 families, 522 (38%) showed hookworm eggs in the stool. The 17% lower incidence of infection in this series of examinations as compared to the first series can be attributed to the fact that these persons were not seeking medical aid. Of the total of 3,178 patients examined, 1,378 were found to have hookworm eggs in the stool. This is an over-all incidence of hookworm infection of 43.3%.

Owing to some difficulties in the colony, this investigation could not be carried out more thoroughly; however, the sanitary conditions of these families were evaluated. Paraguay is a republic without public waterworks or sewage disposal systems as we know them in the United States. This is true of its capital, Asunción, and many smaller towns. In the Chaco these families had no indoor flush toilets or cesspools. Of the 287 families, 241 had deep-pit outdoor toilets, 37 had shallow-pit toilets (pits less than 4 feet in depth), 7 had no pits, and 2 of these families shared toilets with their neighbors. None was flyproof. The soil in this region is heavily infested with hookworm, which was demonstrated by the isolating and hatching of hookworm eggs in soil samples taken from various farmyards.

As to the treatment, the majority of patients were given carbon tetrachloride, others thymol, and some chenopodium oil. Owing to the difficulties mentioned, it was impossible to determine the number of cures; however, of the 123 persons with hookworm infection who were given hexylresorcinol crystoids, 88 were free of hookworms two months later.

As a result of these studies, recommendations were made for: (1) the constant use of closed shoes; (2) the constant use of only deep-pit, flyproof, outside toilets; (3) intensification of hookworm control; more accurate determination of the incidence and intensity of the infection and degree of soil infestation; and (4) intensive mass and individual treatment, to include administration of vermifuge and increased consumption of red meat and iron.

Alvin W. Gaede, M.D.
452 Haberfelde Bldg.
Bakersfield, Calif.

"CALCIFIED BURSITIS"

To the Editor:—Frequently in medical periodicals the term "calcific" or "calcified" bursitis is freely mentioned in reference to a painful shoulder with restricted motion in which calcium deposits are seen in the roentgenogram. Qualified radiologists and orthopedists are both guilty of this error. Since the disease arises primarily in degenerated tendon and does not originate in the subacromial bursa, any reference to the bursa must be that of secondary alteration. In daily practice the finding of calcific-like opacities about the humeral head will oftener than not lead to a diagnosis of "calcified subacromial or subdeltoid bursitis" on the radiologist's report. Although chalk may rupture into the bursa, its presence in the sac is uncommon. The appearance of free chalk in the bursa results when the calcified material lies in the supraspinatus tendon and only when the mass has ruptured through the degenerated tendon fibrils as well as through the floor of the bursa itself. In exploring a large number of shoulders with calcareous deposits one rarely finds free chalk within the bursal sac. The bursa is frequently distended with cloudy fluid, and its walls are edematous, fiery red, and bleed freely. Occasionally, inspissated fibrin is found in an acutely inflamed bursa. Sometimes the bursa is perfectly normal in appearance and has a normal wall thickness. This usually occurs when the calcified mass exists in one of the cuff tendons other than the supraspinatus. Following the opening of the roof of the bursa, one sees single and, not infrequently, multiple calcified mounds, which shine through the floor of the bursa. The calcified masses are found in the substance of the tendon that inserts into the capsule and rim of the head. From a pathological point of view, therefore, free chalk within the bursa is an infrequent finding. It is conceivable that chalk can similarly be dispersed into the shoulder joint itself if it erodes and penetrates the capsule below the tendon. Since bursal changes when associated with acute calcific deposits in the supraspinatus tendons are secondary and not primary, "calcific tendinitis" is probably a more representative title. The disease in the tendon probably represents a degenerative process of fibroelastic tissue with calcific metaplasia.

A. F. Serbin, M.D.
99 Pratt St.
Hartford 3, Conn.

CORRECTION IN SURGICAL PROGRAM IN SPAIN

To the Editor:—I would like to correct a statement in the May 3rd issue of The Journal, page 81, concerning the Congress of Surgery in Spain, in which it was stated that I was going to be on the program. I have never been on the program of the congress and do not intend to be on it, nor to attend the meeting.

Alton Ochsner, M.D.
Prytania and Aline Streets
New Orleans 15

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Drugs: Manufacturer's Liability for Dermatitis Following Application of Ordinarily Harmless Drug.—The plaintiff sued for damages alleged to have resulted from the negligence of the defendant company, and, from a judgment in favor of the defendant, the plaintiff appealed to the supreme court of Utah.

The plaintiff, a beautician, purchased some of the defendant's lotion for use in her shop. The lotion, containing ammonium thioglycolate, an ingredient common to most cold wave solutions and ordinarily harmless, was applied to a patron's hair with a powder fixative that accompanied it, which fixative contained potassium bromate, also ordinarily harmless. The two, in accordance with the manual of instructions, were applied with bare hands, and the entire process was controlled by an electrical device adjusted according to hair types. Prior to this time, the plaintiff had suffered no skin affliction. During one week, she used the defendant's products seven or eight times; blisters and inflammation appeared between her fingers; this condition spread to her arm and shoulders. The ailment was diagnosed as dermatitis, resulting in the defendant's hospitalization and the eventual desertion of her profession. Patch tests conducted by her own expert witness established the fact that she did not react unfavorably either to the lotion or to the fixative but did to a mixture of the two. After she was forced to retire from the business, her former partner continued to use the defendant's products without any ill effects.

The plaintiff contended that the defendant was negligent in distributing, without warning, a permanent wave lotion unfit for the use for which it was intended and containing irritants dangerous to users, which facts the defendant knew or should have known and which irritants injured the plaintiff who used the lotion.

The only evidence tending to indicate that the lotion was harmful to anyone else was the plaintiff's own testimony that she had observed some soreness on her partner's hands after the latter had used the products and that one patron suffered two or three little scalp burns, obviously not the result of allergy, but the result of heat, which is quite dissimilar to the plaintiff's ailment. Significantly, said the court, on cross-examination, the plaintiff admitted having testified previously on deposition that her partner had not suffered any injury from such use, and also significant was the fact that her partner failed to testify on deposition that she was affected by the use of the product. No other evidence revealed that the lotion, the fixative, or a mixture of the two contained any harmful ingredient except that ammonium thioglycolate produced a reaction in one allergic woman in 1,000 using it. Nor was any showing made of knowledge on the part of the defendant as to the dangerous nature of any ingredient such as might charge it with knowledge thereof imposing on it a duty to warn users. No evidence was forthcoming that would render reasonably foreseeable the peculiar sensitivity or idiosyncrasy of the plaintiff.

The plaintiff appeared to be sensitive to the mixture, much the same as some people respond to strawberries, a commodity honored so frequently by the authorities in illustrating difference in liability to the allergic in contrast to the normal person. We believe, said the supreme court, that considering the facts of this case, the trial judge strained neither common sense nor realism in concluding that the plaintiff's ailment, being the result of an allergy, was not compensable as a matter of law. We are sympathetic with the plaintiff and her misfortune but cannot require a merchant to assume the role of absolute insurer against physiological idiosyncrasy. To do so would invest the elusive, ordinary, prudent man with a quality of foresight that would take him out of character completely. Every substance, including food that is daily consumed by the public, occasionally becomes anathema to him peculiarly allergic to it. To require insurability against such an unforeseeable occurrence would weaken the structure of common sense as well as place an unreasonable burden on the channels of trade.

Counsel for the plaintiff ably urged that there was sufficient evidence to reach the jury on the question of negligence. Examination of the authorities, however, required the court to differ and to hold that there was no evidence to go to the jury on the question of the reasonable foresight of danger and harm to the normal person contemplated by the law. Quoting from a textbook on torts, the supreme court said, "The manufacturer is at least entitled to assume that the chattel will be put to a normal use by a normal user and is not subject to liability where it would ordinarily be safe, but injury results from some unusual use or some personal idiosyncrasy of the consumer." We are disposed to feel, the supreme court concluded, that the defendant could not fairly be held to have foreseen what would happen when the thioglycolate, itself harmless to the plaintiff but when in combination with the fixative, which was equally harmless alone, reacted on her because of an allergic skin in such a way as to result in dermatitis.

Accordingly, the judgment of the trial court in favor of the defendant was affirmed. *Bennett v. Pilot Products Co., Inc., 235 P (2d) 525 (Utah, 1951).*

MEDICAL MOTION PICTURES

NEW FILMS ADDED TO A. M. A. LIBRARY

Man Alive: 16 mm., color, sound, showing time 11 minutes. Produced in 1952 by United Productions of America, Hollywood, for the American Cancer Society. Procurable on loan (service charge $1.00) from Committee on Medical Motion Pictures, American Medical Association, 535 N. Dearborn St., Chicago 10, or on loan from state and local divisions of the American Cancer Society.

The main objective of this cartoon type film is to point out the importance of seeking competent medical advice when cancer is suspected. This objective is accomplished emphatically by drawing a parallelism between problems of physical symptoms and the symptoms of an automobile. The dangers of procrastination, the use of quack remedies, and the importance of seeking legitimate advice are forcefully presented in a humorous and entertaining manner. The photography, narration, and cartoon style are exceptionally good. This film is highly recommended for all high school and adult lay audiences.

Sciatic Pain and the Intervertebral Disc: 16 mm., color, sound, showing time 25 minutes. Produced in 1945 for the United States Navy Bureau of Medicine and Surgery. Procurable on loan (service charge $1.00) from Committee on Medical Motion Pictures, American Medical Association, 535 N. Dearborn St., Chicago 10.

The film begins with a clear demonstration in a fresh specimen of the function of the disc. The various parts of the disc are described, and the pressure and distortions are visualized. The relations of these structures to the nerve roots of the cauda equina are shown. A proper examination of the patient is then made, which includes a general physical examination, a neurological examination, and appropriate x-ray pictures of the spine. The classical symptoms and signs are demonstrated, and myelography is also shown by means of animation. Then the two types of treatment, conservative and operative, are demonstrated. The operative removal of the disc is very briefly and effectively shown by means of a unilateral approach to an interlaminar space. It is pointed out that some cases require spinal fusion, and this is illustrated by an H-shaped interspinous tibial graft. The film closes with a short illustration of postoperative exercises and rehabilitation.

This film is short, clear, and well organized. The animation and narration are well done, and the photography is satisfactory. The sequences dealing with differential diagnosis are informative. It will be useful to anyone who is concerned with the intervertebral disc problem, including surgeons, neurosurgeons, neurologists, internists, general practitioners, and possibly medical students.

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Arch. Indust. Hyg. & Occup. Med., Chicago

5:185-310 (March) 1952

Purpose and Program of the Cancer Prevention Committee. W. E. Smith.—p. 187.
Trends in Cancer Mortality. E. C. Hammond.—p. 190.
Lung Cancer in Chromate Industry. F. Gregorius.—p. 196.
Use of Life Insurance Company Records for Cancer Studies. E. A. Lew.—p. 198.
Occupational Cancer Hazards in American Industries. W. C. Hueper.—p. 204.
Lung Cancer with Special Reference to Experimental Aspects. W. E. Smith.—p. 209.
*Studies on Lung Cancer in Relation to Smoking. E. L. Wynder.—p. 218.
Industrial Exposure to Chromates in New York State. H. S. Dankman.—p. 228.
Use of Cytologic Method in Industrial Medicine, with Special Reference to Tumors of Lung and Bladder. H. A. Cromwell and G. N. Papanicolaou.—p. 232.
Bladder Lesions from Aromatic Amines: Statistical Considerations and Prevention. M. Barsotti and E. C. Vigliani.—p. 234.
Survey of Some Current British and European Studies of Occupational Tumor Problems. W. E. Smith.—p. 242.
Chemical Causes of Occupational Cancers: Aromatic Amines Acting on Bladder. R. Truhaut.—p. 264.
Workmen's Compensation Insurance as Source of Data on Tumors in Relation to Occupation. R. N. Gray.—p. 274.
Program of the New York State Occupational Cancer Committee. M. R. Mayers.—p. 279.
The New Jersey Occupational Cancer Survey. E. D. Merrill.—p. 284.
Comments on Occupational Cancer Surveys in the United States. W. C. Hueper.—p. 288.

Lung Cancer and Tobacco Smoking.—The smoking of tobacco, especially cigarets, rather than previous lung disease or occupational exposure is believed to be primarily responsible for the great increase of lung cancer. This is supported by Wynder's report on 729 patients with bronchogenic carcinoma. Among these were 650 men with epidermoid and undifferentiated carcinoma and 39 with adenocarcinoma and 25 women with epidermoid and undifferentiated carcinoma and 15 with adenocarcinoma. Among the men 1.5% were nonsmokers compared with 14.6% among the general hospital population of the same age and economic group without cancer, and 20.1% were chain smokers as compared with 7.6% of the control group. Much more tobacco, especially cigarets, was used among patients with cancer of the lungs, and the greater the amount smoked the greater was the occurrence of primary lung cancer. Epidermoid and undifferentiated carcinoma of the lung was rarely found in a man who had not been a heavy smoker for many years. About 85% of the men had smoked for more than 30 years, whereas few of the women had smoked for such a period. The present sex ratio of lung cancer may thus be attributable to this difference in long-term smoking habits of the two sexes. The enormous increase in the sale of cigarets in this country parallels approximately the increase in bronchogenic carcinoma. Although many exogenous factors are important in causation of primary lung cancer, tobacco appears to play a most important role. Since inorganic cancerogenic constituents, especially arsenic, may be found in tobacco, one preventive measure should be identification and removal of these specific carcinogenic agents. Because the risk of getting cancer of the lung increases as more tobacco, especially cigarets, are smoked, moderation, if complete elimination is impossible, is another preventive measure.

A.M.A. Arch. Neurology and Psychiatry, Chicago

67:269-418 (March) 1952

*Tumors of Medulla Oblongata. I. S. Cooper, J. W. Kernohan and W. McK. Craig.—p. 269.
*Neuropsychiatric Aspects of Cushing's Syndrome. W. H. Trethowan and S. Cobb.—p. 283.
Relative Effects of Occipital and Peripheral Blindness upon Intellectual Functions. J. Levine.—p. 310.
Effectiveness of Chordotomy in Phantom Pain After Amputation. J. C. White and W. H. Sweet.—p. 315.
Word Deafness and Wernicke's Aphasia: Report of Cases and Discussion of Syndrome. D. K. Ziegler.—p. 323.
Lipids and Proteins of Plasma in Patients with Diseases of Nervous System. A. A. Fisk, A. Chanutin and W. O. Klingman.—p. 332.
Experimental Chronic Epilepsy in Monkey: Effect of Ablation of Contralateral Precentral Motor Cortex. L. M. Kopeloff, J. G. Chusid, B. L. Pacella and N. Kopeloff.—p. 336.
Statistical Control Studies in Neurology: II. Pronator Sign of Wilson. N. Savitsky and J. M. Madonick.—p. 344.
Electromyogram from Orbicularis Oculi in Normal Persons and in Patients with Myasthenia Gravis. S. Y. Botehlo, C. F. Deaterly and J. H. Comroe Jr.—p. 348.
Effects of Histamine on Cerebral Hemodynamics and Metabolism. R. W. Alman, M. Rosenberg and J. F. Fazekas.—p. 354.
Electrical Recordings of Normal and Abnormal Eye Movements Modified by Drugs. P. S. Bergman, M. Nathanson and M. B. Bender.—p. 357.
Effects of Subtotal Lesions of Frontal Granular Cortex on Delayed Reaction in Monkeys. R. A. Blum.—p. 375.

Tumors of the Medulla Oblongata.—This series of 15 tumors of the medulla oblongata includes only histologically verified tumors that were confined to the medulla oblongata or in which extension of the tumor into the pons or into the spinal cord was minimal. In 14 cases the lesions were verified at necropsy and in 1 case surgically. Five patients, or one-third, were in the first decade of life. Three were in the third decade, three in the fourth decade, two in the fifth, and one in the sixth. Although the medulla contains five pairs of cranial nerves, involvement of these nerves was not frequent, and when present, tended to appear late. The most frequent symptoms were ataxia, muscular weakness, diplopia, headache (usually cervico-occipital), and vomiting. Diplopia, ataxia, and headaches were the most frequent early symptoms. The most frequent neurological signs were those of the pyramidal and extrapyramidal tracts, ataxia nystagmus, incoordination of the upper extremities, and signs of involvement of the cranial nerves. Nine of the 15 patients presented bilateral signs; six had evidence of increased intracranial pressure. The extreme variability of the symptoms and signs is the most outstanding feature of tumor of the medulla oblongata. Another incongruous feature of many of these cases is the tremendous size of the tumor revealed at necropsy, in contrast with the relative paucity of neurological signs. Furthermore, any patient with a neoplasm of the medulla oblongata is a potential victim of sudden death from respiratory failure. Nine of the 15 medullar tumors were astrocytomas, 1 each were ependymoma and oligodendroglioma, and 4 were hemangioendotheliomas. The histories of six patients are presented.

Neuropsychiatric Aspects of Cushing's Syndrome.—Since Cushing described a disease associated with basophile adenoma of the pituitary gland, it has become widely recognized that the characteristic clinical picture may not only be associated with this lesion but with other pathological conditions. Thus, it has become customary to speak of Cushing's syndrome rather than of Cushing's disease, and to apply the latter term, if at all, to those cases in which a basophile adenoma is demonstrable. Furthermore, it now seems clear that the clinical picture of both Cushing's disease and Cushing's syndrome can be regarded as the result of adrenocortical hyperfunction, whether the lesion is neoplastic or hyperplastic. This study is concerned primarily with the neuropsychiatric symptoms of 25 patients with Cushing's syndrome. Four patients, who exhibited the greatest degree of mental disturbance, were studied more fully. Six patients were classifiable as moderately disturbed, eight as mildly disturbed, three had insignificant psychiatric symptoms, and four

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Titles marked with an asterisk (*) are abstracted.

patients were thought to be normal. Seven of the 25 patients died (4 postoperatively), 2 others of carcinoma, and 1 later of cerebral hemorrhage. One patient probably requires further surgical treatment, and in two others it is as yet too early to assess the adequacy of treatment. Observations on the other 15 patients indicated that although mental disturbance may be severe, recovery from this and physical disabilities is to be expected in a reasonable proportion of cases following adequate surgery, which seems to be the treatment of choice. The fall in the protein content of the cerebrospinal fluid after operation is thought to be an indication of the reversibility of the abnormal cerebral function. Full recovery may be delayed or prevented by hypoadrenalism following the operation, or by gross or irreversible cerebral damage. Some possible etiological factors are described and related to the occurrence of endocrine dysfunction and mental symptoms.

A.M.A. Arch. Ophthalmology, Chicago

47:273-414 (March) 1952

Representation of Corneal and Conjunctival Sensation in Central Nervous System. D. G. Cogan and J. Ginsberg.—p. 273.

Detection of Intraocular Tumors with Radioactive Phosphorus: Preliminary Report with Special Reference to Differentiation of Cause of Retinal Separation. C. I. Thomas, J. S. Krohmer and J. P. Storaasli. —p. 276.

Stellate-Ganglion Block in Retinitis Pigmentosa. R. J. Kennedy and W. J. McGannon.—p. 287.

Vertical Component in Strabismus. W. H. Fink.—p. 292.

Experimental Studies on Early Lens Changes After Roentgen Irradiation: III. Effect of X-Radiation on Mitotic Activity and Nuclear Fragmentation of Lens Epithelium in Normal and Cysteine-Treated Rabbits. L. von Sallmann.—p. 305.

Facial Deformity in Acrocephaly and Its Surgical Correction. M. L. Lewin.—p. 321.

Relation of Factors Involved in Maintenance of Optical Properties of Cornea to Contact-Lens Wear. G. K. Smelser.—p. 328.

Studies on Intraocular Penetration and Toxicity of Terramycin. E. J. Cannon, A. C. Nichols and I. H. Leopold.—p. 344.

Case of Phthisis Bulbi Due to Chickenpox. C. Ellenberger.—p. 352.

Ocular Aspects of Mycotic Infection. H. L. Birge.—p. 354.

Diseases of Uveal Tract. M. J. Hogan.—p. 383.

American Journal of Clinical Pathology, Baltimore

22:201-300 (March) 1952

*The Laboratory in Diagnosis of Brucellosis. W. W. Spink.—p. 201.

Important Antigenic Relationships in Serologic Diagnosis of Brucellosis. C. A. Stanfield, P. W. Taylor and H. R. Morgan.—p. 211.

Role of Coagulase-Globulin in Blood Coagulation and Its Thromboplastic Action, with Particular Reference to Defect in Hemophilia. J. B. Miale. —p. 218.

Cytologic Study of Incipient Carcinoma. J. W. Reagan.—p. 231.

Determination of Antistreptolysin O. J. J. Robinson, Y. E. Crawford and D. M. Roholt.—p. 237.

Independence of Antistreptolysin O and Antistaphylolysin Serum Titers. J. J. Robinson and Y. E. Crawford.—p. 247.

Distinguishing Saprophytic from Virulent Mycobacteria by Intracutaneous Inoculation of Guinea Pigs. J. H. Kite Jr., R. A. Patnode and T. Read Jr.—p. 250.

Lymph Node Aspiration: Clinical and Hematologic Observations in 101 Patients. M. Morrison, A. A. Samwick, J. Rubinstein and others. —p. 255.

Diagnosis of Brucellosis.—As a result of 15 years' experience in treatment of brucellosis in the University of Minnesota Hospitals, the author states that the clinician can make only a presumptive diagnosis of brucellosis because there are no distinguishing clinical characteristics of either acute or chronic brucellosis. A positive intradermal test with brucella antigen reveals only previous exposure to Brucella, and, regardless of the symptoms, does not establish a diagnosis of active disease. A precise diagnosis of human brucellosis depends on laboratory procedures. Helpful aids in screening suspected cases of brucellosis include total and differential leukocyte counts of the peripheral blood. Usually the disease is accompanied by a normal or reduced leukocyte count and a relative lymphocytosis. The erythrocyte sedimentation rate is of no diagnostic help. The agglutination test is a valuable procedure for the diagnosis of brucellosis. Two agglutination techniques may be employed as follows: The rapid-slide test, utilizing an antigen consisting of Brucella abortus cells fixed with a solution of formaldehyde and then suspended in sodium chloride solution to which methylene blue has been added, is valuable for preliminary investigation of suspected cases. The tube dilution test employing an antigen of Br. abortus supplied by the U. S. Department of Agriculture provides reliable quantitative data, and should be performed with every blood specimen from persons suspected of having brucellosis. A "diagnostic titer" of brucella agglutinins depends on several factors, including the sensitivity of the antigen and the technique employed. In a large number of cases it was observed that over 90% of the patients with positive blood cultures had simultaneous agglutinin titers of 1:320 or above. It is unusual to observe a patient with positive blood cultures and absence of brucella agglutinins. The most dependable diagnostic procedure is the isolation of Brucella from the body fluids or tissues. Success in culturing Brucella depends on selection of a suitable culture medium and on repeated attempts to isolate the organisms. Brucella cannot be isolated from a significant number of patients with undoubted brucellosis. The opsonocytophagic test and the complement-fixation test are not recommended as routine laboratory procedures.

American Journal of Ophthalmology, Chicago

35:301-462 (March) 1952

*Retrolental Fibroplasia: Etiology and Prophylaxis. T. S. Szewczyk. —p. 301.

*Congenital Malformations of Eye Induced in Mice by Maternal Anoxia: With Particular Reference to Problem of Retrolental Fibroplasia in Man. T. H. Ingalls, C. G. Tedeschi and M. M. Helpern.—p. 311.

Retrolental Fibroplasia: Clinicopathologic Study. H. Ryan.—p. 329.

Congenital and Familial Endothelial Defects. J. M. Levitt and R. I. Lloyd.—p. 342.

Successful Corneal Graft in Case of Endothelial and Epithelial Dystrophy. F. W. Stocker.—p. 349.

Experimental Study of Possibility of Transmitting Syphilis by Corneal Graft. M. E. Randolph.—p. 352.

Corneal Transplantation Using Corneal Cap. J. T. Worcester.—p. 357.

Pseudoglioma: Clinicopathologic Study of 15 Cases. Part III. Clinical Considerations. T. E. Sanders.—p. 364.

Lens-Induced Uveitis and Glaucoma. Part II. "Phacotoxic" Reaction. S. R. Irvine and A. R. Irvine Jr.—p. 370.

Response of Retinal Vessels to Priscoline in Diabetes Mellitus. Study II. M. R. Cholst, H. F. Schilback, M. B. Handelsman and L. M. Levitt. —p. 375.

Choice of Test Objects in Visual Field Studies. M. Chamlin and L. M. Davidoff.—p. 381.

Buphthalmos. Results from Operative Procedures Particularly Cyclodiathermy: Report of Six Cases. S. B. Forbes.—p. 393.

Screw-Type Implant. T. I. Moore.—p. 399.

Simple Classification of Retinal Angiopathy in General Arterial Hypertension. J. L. Pavía.—p. 404.

Retrolental Fibroplasia: Etiology and Prophylaxis.—This paper is an elaboration of a preliminary report, which was published in the *Americal Journal of Ophthalmology* (34:1649 [Dec.] 1951) and abstracted in THE JOURNAL (April 12, 1952, page 1361). Szewczyk shows that retrolental fibroplasia is a terminal stage of uncompensated anoxic retinopathy in prematurely born infants. Anoxia may exist primarily because of inadequate oxygenation of the blood or be induced by exposing a prematurely born infant to an environment with higher oxygen concentration and withdrawing him so rapidly that the physiological changes of acclimatization cannot take place before irreparable harm is done to rapidly developing areas, such as the retina of the eye. Retrolental fibroplasia is preventable by the proper administration of oxygen. Premature infants should be given only sufficient oxygen to meet their needs, and the amount should be reduced slowly. Excessive oxygen concentrations should be avoided. The type of damage produced in immature neural tissue depends on the stage of development during which the anoxia becomes manifest. Nontraumatic intracranial hemorrhages in the newborn, cerebral palsy, certain cases of epilepsy, mental retardation, and certain endocrine disturbances may be entirely due to anoxia during a period of rapid development of certain centers. Any condition interfering with oxygenation during pregnancy or infancy is extremely serious. Methods of delivery that produce anoxia in a baby should be avoided.

Congenital Malformations in Mice and Retrolental Fibroplasia in Man.—The hypothesis has been advanced that retrolental fibroplasia is acquired in the late prenatal or paranatal period and that sublethal anoxia is a principal causative agent. The problem was studied in the laboratory as part of an investigation of the effects of anoxia on the offspring of pregnant mice. The present report is concerned with developmental anomalies of the eyelids and intraocular structures, including the process referred to as "open eye." Pregnant mice were exposed to less than normal atmospheric pressure in a chamber from which air was continuously being exhausted by a vacuum pump. Congenital anomalies of the fetus characterized by opened eyelids at birth and by associated defects of the retina and vascular system followed anoxic insult on the 16th ± 1.5 day of gestation. Extraocular hamartomas and hydrocephalus were also observed. The anomaly classified as open eye was similar to defects observed by others among the third and fourth generation of progeny of females exposed to x-rays, and among the progeny of animals reared on vitamin deficient diets or subjected to metabolic injury during gestation. These findings are consistent with two well-established principles of experimental teratology, namely, that unrelated agents acting during pregnancy may give rise to the same type of disorder and that the resulting anomaly is determined by the stage of development at which the agent is active. In relation to human epidemiology the findings suggest the importance of time and multiple causative factors as determinants of specific ocular congenital malformations. In view of the similarities of the open eye anomaly to retrolental fibroplasia, recent observations of Szewczyk, who regards retrolental fibroplasia as an example of a response of immature neural tissue to anoxia, deserve further consideration.

American Journal of Psychiatry, New York

108:561-640 (Feb.) 1952

Modifications in Ego Structure and Personality Reactions Under Influence of Effects of Drugs. E. Lindemann and L. D. Clarke.—p. 561.

Drugs That Produce Deviations in Mood, Including Anxiety, Presumably Without Impairing Capacities for Orientation or at Least Secondarily to Changes in Mood. R. A. Cleghorn.—p. 568.

Experimental Schizophrenia-Like Symptoms. M. Rinkel, H. J. DeShon, R. W. Hyde and H. C. Solomon.—p. 572.

Effects of Mescaline and Lysergic Acid (d-LSD-25). P. H. Hoch, J. P. Cattell and H. H. Pennes.—p. 579.

Effect of Drugs: Theoretical Considerations from Psychological Viewpoint. P. H. Hoch, J. P. Cattell and H. H. Pennes.—p. 585.

Mechanisms of Action of Drugs That Modify Personality Function. A. Wikler.—p. 590.

Recording Findings of Psychological Examination ("Mental Status"). K. A. Menninger.—p. 600.

Narcosynthesis Immediately Following Insulin Shock: Five-Year Follow Up and Supplementary Report. S. Levy.—p. 610.

Psychiatric Study of Coal Miners in Eastern Kentucky Area. C. Wiesel and M. Arny.—p. 617.

Hospital Examination of Adult Offenders. K. G. Gray.—p. 625.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

67:351-534 (March) 1952

*Scintillation Counter for Diagnosis and Localization of Intracranial Neoplasms. M. Ter-Pogossian, W. B. Ittner III, W. B. Seaman and H. G. Schwartz.—p. 351.

Use of Serial Angiography in Diagnosis of Space Occupying Intracranial Lesions. H. C. Voris.—p. 360.

Pleural Calcification Resulting from Exposure to Certain Dusts. A. R. Smith.—p. 375.

*Streptomycin in Pulmonary Tuberculosis: Clinico-Roentgenological Consideration. A. J. Ackerman and J. H. Moyer.—p. 383.

Unusual Causes of Rib Notching. M. C. McCord and F. A. Bavendam. —p. 405.

Layering Phenomenon of Renal Calculi. C. Gottlieb, M. H. Poppel and S. L. Beranbaum.—p. 410.

Uncommon Compressing Lesions of Spinal Cord and Its Membranes with Report of Five Cases. A. Sheinmel and S. M. Glasser.—p. 415.

Cancer of Gums. C. L. Martin and E. J. Crafley.—p. 420.

Radiocurability of Cancer. M. Lenz.—p. 428.

Roentgen Therapy in Cancer of Larynx and Hypopharynx. R. M. Caulk. —p. 443.

Roentgenographic Cephalopelvimetry. F. O. Coe.—p. 449.

Depth Dose Investigation for Perforated Grid Therapy at 200 Kilovolts. L. E. Jacobson and A. Lipman.—p. 458.

Grid Technique of Radiotherapy with Depth Dose Measurements. O. H. Cohen and W. L. Palazzo.—p. 470.

Diagnosis and Localization of Intracranial Neoplasms.—A scintillation counter has been designed by the authors for detection and localization of brain tumors using a photomultiplier tube whose photocathode detects as an electric pulse the flash of light or scintillation of a crystal of sodium iodide with a small added thallium impurity. The scintillation counter is built in a chromium-plated brass detector head suspended on a counterbalanced arm, which is articulated to allow easy positioning of the detector in any position on the head of the patient. This instrument is about 200 times as efficient in detection of gamma rays from radioactive iodine (I^{131}) as the conventional thin window Geiger-Müller counter, and about 40 times as effective as a Geiger counter with a bismuth-coated cathode. The increased efficiency of this instrument has reduced the time of brain tumor localization surveys from two to three hours to 20 to 30 minutes. The amount of radioactive material required has been reduced by a factor of four, since counting rates of 600 to 700 counts per second are obtained after the injection of 0.25 mc. of diiodofluorescein. The instrument has been found to be quite stable and reliable.

Streptomycin in Pulmonary Tuberculosis.—The roentgenologic manifestations observed in the course of pulmonary tuberculosis in 187 patients treated with streptomycin are reported. A dose of 300 mg. of the drug every six hours or 1.2 gm. per day intramuscularly proved effective, and untoward reactions, particularly vestibular dysfunction, were less frequent and severe than with higher doses. The chief value of the drug is its ability to cause significant symptomatic improvement in all patients so treated, and in the effect it exerts on exudative lesions regardless of whether exudation dominates the clinical picture or accompanies caseous or fibrocaseous lesions. The therapeutic effect is limited by drug resistance, which developed in most cases. The conventional roentgenologic classification of individual tuberculous lesions is not accurate, since it is not possible to distinguish exudative noncaseous and caseating lesions. The only reliable roentgenologic evidence of caseation is the appearance of cavities within areas of pneumonic infiltration. Exudative lesions in areas of recent exacerbation usually resorb completely under streptomycin therapy. Small residual infiltrations almost invariably represented older foci in which new exacerbations recurred. This is in keeping with the modern concept of the evolution of pulmonary tuberculosis, as opposed to the older view of continuous apicocaudad progression. The administration of streptomycin in fibrocaseous and productive tuberculosis is useful to the extent that it usually limits the disease to the parenchyma already involved. The exudative lesions accompanying these forms of tuberculosis also absorb, though less promptly than in the predominantly exudative phase. In some cases, however, bronchogenic spreads may occur despite continued treatment. Tuberculous cavities may appear despite streptomycin therapy. Cavities are usually seen in tuberculous pneumonia which has progressed to caseation. This is not usually modified by the drug. Cavities frequently decrease in size and, when isolated, may completely disappear. This is due in part to alleviation of bronchostenosis and in part to the process of repair that may eventually leave a scar at the site of the cavity. Streptomycin represents a useful adjunct to the accepted methods of treatment in pulmonary tuberculosis, but alone it is not a method of definitive therapy. Use of streptomycin for prophylaxis against such complications as empyema and bronchopleural fistulas may extend the field of surgical treatment of tuberculosis.

Am. Practitioner & Digest of Treatment, Philadelphia

3:89-176 (Feb.) 1952

Oxytocic Agents—Their Status and Improvement. L. J. Decina.—p. 89.

Electrolyte Problems in Medicine and Surgery. A. J. Merrill.—p. 92.

Aminopterin in Treatment of Acute Leukemia of Adults. B. R. Gendel, A. P. Kraus and F. D. Green.—p. 97.

Hypothyroidism and Neurotic Depression. A. D. Jonas.—p. 103.

What to Tell Parents of Child with Progressive Myopia. R. I. Pritikin and M. L. Duchon.—p. 106.

Bone Tumors: Radiologic Diagnosis. H. R. Senturia and L. J. Fox. —p. 107.

Comparative Study of Antacid With and Without Vitamin C in Treatment of Peptic Ulcer. E. C. Nash.—p. 117.

Intercapillary Glomerulosclerosis: Report of Case with Diagnosis Confirmed During Life. M. M. Chertack and J. T. Paul.—p. 122.

Aplastic Anemia: Report of Case. B. R. Gendel and P. P. Schmidt. —p. 125.

Chloroquine Treatment of Amebic Liver Abscess. J. B. Harris and R. A. Wise.—p. 128.

Portal Hypertension. C. T. Stone.—p. 134.

American Surgeon, Atlanta, Ga.

18:245-336 (March) 1952

Thyroidectomy. W. H. St. Clair Jr.—p. 245.
Clinical Aspects of Ectopic Ureter. R. M. Bobbitt.—p. 254.
Effect of Prostatectomy on Hypertension. A. I. Dodson, A. J. Chenery and J. W. Choate.—p. 260.
Problems in Anesthesia of Special Interest to Surgeon. C. Y. Fordyce.—p. 266.
*Total Intrathoracic Goiters: With Particular Emphasis on Posterior Mediastinal Location. J. H. Johnston Jr. and G. E. Twente.—p. 274.
Gallstone Obstruction of Intestinal Tract: Review of 15 Cases. R. J. Coffey and G. D. Willox.—p. 286.
Treatment of Certain Complicated Fractures of Pelvis. H. E. Conwell.—p. 297.
Reduction in Hemoglobin Concentration and in Red Blood Cell Count Following Thoracolumbar Sympathectomy for Hypertension, with Suggestions for Possible Use of this Operation in Polycythemia Vera. J. M. Meredith and J. Kell Jr.—p. 307.
Primary Carcinoma of Appendix: Report of Case. W. E. French.—p. 313.
Evaluation of S. M. O. Metallic Head. P. B. Steele.—p. 317.
Posterior Monteggia Fracture. E. G. Edwards.—p. 323.

Total Intrathoracic Goiters.—The occurrence of posterior mediastinal goiter in four women and one man between the ages of 45 and 71 is reported. Total intrathoracic or mediastinal goiter implies extension of the thyroid below the superior thoracic strait with the goiter totally confined within the chest. It is a disease of middle and later life, with a ratio of 5 or 6 women to 1 man. The thyroid mass removed from the first patient measured 20 by 28 by 10 cm. and weighed 1,730 gm. It apparently represents the largest intrathoracic thyroid thus far removed and is of interest in that the descent was complete, with the huge thyroid nodule resting on the right diaphragm. All six of the posterior mediastinal goiters presented predominantly into the right chest. This is probably due to the obliquity of the arch of the aorta; its pulsations may guide descending thyroid nodules towards the right. Transthoracic thyroidectomy was used in four cases; it was mandatory in three, because of huge size and location of the tumor, pronounced calcification, and questionable diagnosis, respectively. In the two remaining cases the total intrathoracic goiter could be removed through the conventional cervical approach; in one of them the mediastinal mass was removed by morcellation, while in the other a well-defined surgical capsule greatly facilitated the mediastinal dissection, aiding in delivery of the mass to the neck. Excisional surgery remains the treatment of choice in thoracic goiters. As the intrathoracic extension may be completely separated from the cervical goiter, it could easily be overlooked during a thyroidectomy. Search for thoracic extension should be routine in thyroidectomy for nodular goiter. All patients with adenomatous goiter should have preoperative fluoroscopic examination to exclude extension into the mediastinum. The possibility should be strongly considered in any patient with a mediastinal mass who has had a previous thyroidectomy for adenomatous goiter. Two of the authors' patients had been subjected to previous thyroidectomy for nodular goiter. The diagnosis should be suspected in cases of toxicity without enlargement of the cervical thyroid.

Annals of Allergy, Minneapolis

10:1-108 (Jan.-Feb.) 1952

*Allergy—Its Distribution and Hereditary Concept. B. Ratner and D. E. Silberman.—p. 1.
Dermatitis Medicamentosa Simulating Hodgkin's Disease Due to Mercury Compounds. M. M. Robinson.—p. 21.
Incidence of Allergy in Persons Who Have Many Colds: Controlled Study. S. C. Siegel, J. D. Goldstein, W. A. Sawyer and J. Glaser.—p. 24.
Urticaria Due to Pollen. G. L. Waldbott and K. Merkle.—p. 30.
Allergic Cataract. L. Bentolila, J. M. Vila Ortiz and E. V. Bertotto.—p. 36.
Hemiplegia and Allergic Symptoms Following Ingestion of Certain Foods: Case Report. D. Staffieri, L. Bentolila and L. Levit.—p. 38.
Further Studies on Effect of Histamine on Marchiafava-Micheli Syndrome. E. J. Stefanic and H. F. Loyke.—p. 40.
Over-All Picture of Rheumatism and Arthritis. W. Kaufman.—p. 47.
Identification of Specific Allergens in Bacterial Allergy and Their Use in Desensitization. H. Blatt.—p. 53.
Comparative Effectiveness of Oral Procaine and Tedral in Allergic Conditions. H. Markow, S. Bloom and A. I. Kleinman.—p. 58.

Distribution and Hereditary Concept of Allergy.—The discrepancies noted in published observations on the distribution of allergy and its relation to heredity and the inferences drawn therefrom are largely due to the different methods of collection of data, the criteria employed in defining the allergic state, and the extent to which inquiry was made into the individual and family incidence of allergy. A family history of allergy was obtained in approximately 50% of the authors' 250 allergic children and in 50% of 6,116 allergic children and adults reported in the literature. By comparing the allergic population composed of the authors' 250 patients and their relatives, both direct and collateral antecedents, totaling 6,244 persons, to a random population comprising 3,000 medical students, doctors and nurses, it was found that 10% of persons in both populations had major allergies. About 50% of the random population had minor allergies. The belief that it is characteristic of allergy to appear in a large number of members of so-called allergic families was not supported by the authors' data. While allergy may appear in many members in a few families, this is not the general trend. The age of onset of allergic symptoms is not influenced by the frequency with which allergy occurs in the antecedents. In children there was a significantly greater number of males with allergy. The adult population failed to show this difference. In view of the conflicting conclusions that have been drawn by different investigators in an attempt to apply Mendelian laws to allergy, the difficulty in obtaining adequate material and the inadequate definition of criteria, no genetic hypothesis can be made to fit the existing data. Inferences drawn from studies on twins with regard to genetic influences are not necessarily valid. The atopic theory, which postulates the existence of a special antibody under hereditary influence, is untenable. All persons are potentially capable of developing allergy. Whether a person develops allergy or not depends more on quantitative than qualitative considerations, if one grants that "quantitative" applies not to the degree of exposure but to the amount of antigen that penetrates the tissue cells. The acquisition of hypersensitivity depends on changing factors that cause greater receptivity of the tissues for allergens, the nature of the exciting substance, the amount of allergen to which a person is exposed, the amount of allergen that invades the bloodstream, and the intervals at which the exposures occur.

Annals of Surgery, Philadelphia

135:289-432 (March) 1952

*Circulatory Studies in Mitral Stenosis Before and After Commissurotomy. L. Werkö, H. Eliasch, F. Berglund and C. Crafoord.—p. 290.
Some Observations on Surgical Treatment of Congenital Heart Disease. W. W. L. Glenn and R. Whittemore.—p. 297.
*Foreign Bodies in Heart: Indications for and Technic of Removal with Temporary Interruption of Cardiac Blood Flow. H. Swan, J. H. Forsee and E. M. Goyette.—p. 314.
Controlled Laboratory Production of Hemoglobinuric Nephrosis. C. B. Rosoff and C. W. Walter.—p. 324.
Use of Tubes Constructed from Vinyon "N" Cloth in Bridging Arterial Defects: Preliminary Report. A. B. Voorhees Jr., A. Jaretzki III and A. H. Blakemore.—p. 332.
Experimental Replacement of Portions of Esophagus by Plastic Tube. E. F. Berman.—p. 337.
Effect of Aureomycin on Intestine Subjected to Vascular Injury. N. Rabinovici and J. Fine.—p. 344.
Intestinal Obstruction: Ten-Year Statistical Survey at Hospital of University of Pennsylvania. P. Nemir Jr.—p. 367.
Cardiac Arrest: Review and Report of 12 Cases. W. A. Dale.—p. 376.
Incidence of Gallstones and Their Correlation with Other Diseases. M. M. Lieber.—p. 394.
Experimental Evaluation of Effectiveness of Pancreatin in Reducing Fecal Nitrogen and Fat Loss Following Total Gastrectomy. T. C. Everson.—p. 406.
Carcinoma of Male Breast with Axillary Metastasis Following Stilbestrol Therapy: Report of Case Treated by Radical Mastectomy. G. Y. Graves and H. S. Harris.—p. 411.
Volvulus of Stomach: Report of Case and Review of Literature. J. J. Bazzano and T. K. Hood.—p. 415.
Lymphangiosarcoma in Post-Mastectomy Lymphedema. G. F. Froio and W. G. Kirkland.—p. 421.
Leiomyosarcoma of Rectum, Developing from Benign Leiomyoma. Z. Neuman.—p. 426.

Mitral Stenosis Before and After Commissurotomy.—Commissurotomy was done with a Bailey knife in one, and by so-called finger fracture in four patients between the ages of 31 and 43 with mitral stenosis. Heart catheterization studies were carried out on all five patients before and one month after commissurotomy. In four patients there was a pronounced decrease in the pressures of the pulmonary capillaries and pulmonary artery and a considerable fall in pulmonary vascular resistance. In the remaining patient pressures in the pulmonary circuit were increased postoperatively. This was due to the development of mitral incompetence. This was the only case in which the Bailey knife was used, but it is not possible to regard that as causal. In all patients the cardiac output and systemic arterial pressures rose. In two patients the oxygen arterial unsaturation that was present before the surgical intervention was corrected. All patients showed considerable clinical improvement. This is in accordance with the circulatory changes observed in four patients. In the fifth patient, although the pulmonary pressures were raised, the cardiac output was increased. This may have been responsible for the symptomatic improvement in this patient.

Foreign Bodies in the Heart.—The presence of a metallic foreign body within the heart is reported in two soldiers who had been wounded by shell fragments. The metal entered the chest at the right anterior axillary line in one soldier, and in about the fourth interspace in the posterior axillary line in the other. In the regular anteroposterior and lateral roentgenograms exact location could not be established, and the two foreign bodies appeared to be almost identical in size and position. Angiocardiography, however, clearly demonstrated the crucial difference between the anatomical location of the two fragments. In the first patient the foreign body was wholly within the interventricular septum, and in the second patient it protruded significantly from the septum into the right ventricle. In the first patient pericardial effusion subsided within 10 days and in view of the lack of evidence of infection the foreign body, although 1 cm. by 4 mm. in size, was not removed surgically. The patient recovered completely and returned to active military duty. The second patient had three recurrences of active pericardial effusion, and because the shell fragment impinged on the wall of the right ventricle with each heart beat, it was removed surgically. A long transverse sternum-cutting incision in the fourth interspace bilaterally gave excellent exposure for a transventricular removal during temporary interruption of cardiac blood flow. The postoperative recovery of the patient was rapid and uneventful. The factors determining whether metallic foreign bodies in the heart should be removed are (1) the presence or absence of sepsis, and (2) the exact location of the foreign body in the heart. Angiocardiography is indispensable for exact localization. Under current conditions, with advances in anesthesia, transfusion, antibiotics and surgical technique, the immediate risk from the surgical removal of intracardiac foreign bodies is extremely low.

California Medicine, San Francisco

76:123-254 (March) 1952

*Medical Management of Renal Lithiasis: Increasing Protective Urinary Colloids with Hyaluronidase. A. J. Butt, E. A. Hauser and J. Seifter.—p. 123.
Cardiac Arrest During Anesthesia. W. H. Cassels and N. R. Elnes.—p. 130.
Use of Banthine in Treatment of Digestive Disturbances. L. M. Asher.—p. 137.

SYMPOSIUM: GENITO-URINARY TUBERCULOSIS

Treatment of Genito-Urinary Tuberculosis with Streptomycin and Synergistic Drugs. H. C. Hinshaw.—p. 141.
Correlation of Genito-Urinary and General Tuberculosis. C. R. Howson and E. A. Rouff.—p. 143.
Indications for Surgical Treatment in Genito-Urinary Tuberculosis. G. J. Thomas.—p. 147.

Experiences with ACTH and Cortisone in Selected Dermatoses. E. M. Farber and R. G. Walton.—p. 149.
*Control of Pulmonary Hemorrhage by Intravenous Use of Pituitrin. H. G. Trimble and J. R. Wood.—p. 155.
Public Relations in Practice of Allergy. F. G. Crandall Jr.—p. 158.
Mediterranean Anemia. H. K. Silver.—p. 162.

Hyaluronidase in Renal Lithiasis.—Colloids contained in the urine of a healthy person have a protective action that prevents the precipitation, agglomeration, and conglomeration of crystalloids. Absence or insufficiency of the protective urinary colloids causes the crystal nuclei to become "sensitized," so that stone formation begins or is accelerated. Experiments showed that hyaluronidase, mixed with isotonic sodium chloride solution and injected subcutaneously, prevents stone formation by increasing the content of protective colloids in the urine. These colloids act as excellent dispersing agents and form a reversible gel that prevents electrolytes from crystallizing. The use of hyaluronidase to increase the protective colloids is a new method of treating and preventing renal lithiasis. The 20 patients treated had multiple, bilateral, and rapidly recurring renal calculi. They had passed numerous stones at regular intervals over a period of years, and no previous therapy had proved effective in reducing the formation or re-formation of stone. Subcutaneous injection of 150 turbidity reducing units of hyaluronidase mixed with 1 cc. of sodium chloride solution was regulated individually by observing the duration of increased colloidal activity after injection of the drug, so that this protective activity was maintained at an increased level. The average duration was from 24 to 72 hours. These patients have received hyaluronidase for from 11 to 14 months, and no other form of therapy to combat stone formation has been used. Roentgenograms taken at 30 to 60 day intervals show that no new stone formation or increase in size of existing stones has occurred in 18 of the 20 patients. Larger doses of hyaluronidase may be given when necessary.

Control of Pulmonary Hemorrhage by Intravenous Use of Posterior Pituitary Extract.—Pituitary extract raises the systemic arterial pressure while simultaneously lowering that in the pulmonary circuit. This makes it the best available drug for control of pulmonary hemorrhage. Sudden massive hemorrhage caused by the rupture of an aortic aneurysm or a Rasmussen's aneurysm of a large vessel is obviously beyond the power of any drug to control; slight hemoptysis or bleeding that merely streaks the sputum can usually be controlled by strict bed rest, mild sedation of the cough reflex, and reassurance; severe or repeated hemorrhages falling between these extremes can be promptly arrested by intravenous injection of posterior pituitary extract (pituitrin®). Ten international units of posterior pituitary (1 cc. of obstetrical pituitary extract or 0.5 cc. of surgical pituitary) are diluted in 10 cc. of normal sodium chloride solution and injected slowly (during 10 minutes) into a vein in the arm with the patient supine. In this study pituitary extract was administered intravenously on 78 occasions to 48 patients. The blood pressure usually remains constant before and after injection; the pulse rate may be slightly accelerated. The patient may complain of dizziness shortly after the injection, and intense pallor of the face and extremities may be noted. Slight abdominal cramping and nausea may occur but are transitory. No serious untoward effects have been seen. One intravenous injection will usually control even the severest hemorrhage, but additional injections may be given if fresh bleeding occurs. Difficulties attributable to coronary constriction were not observed. The vasoconstrictor action of pituitary extract is apparently increased by barbiturates, and posterior pituitary shock may be precipitated by barbiturate anesthesia. None of the authors' patients had had more than minimal doses of barbiturates within several hours of the time posterior pituitary extract was injected. The cause of the hemorrhage, if unknown, should be determined after the acute phase. The causes of bleeding in order of frequency were pulmonary tuberculosis, bronchiectasis, lung tumor, coccidioidomycosis, and rheumatic heart disease.

Connecticut State Medical Journal, Hartford

16:71-152 (Feb.) 1952

Medical Education in the Present Emergency. S. C. Harvey.—p. 73.
Is Duodenal Ulcer Hereditary? C. J. McCormack and M. W. Kearney.—p. 82.
Torula Infection of Central Nervous System: Report of Two Cases with Brief Review of Literature. E. Wasserman.—p. 85.
Adrenocortical Extract in Pediatrics; Its Possible Use in Atelectasis of the Newborn. R. W. Provenzano.—p. 89.
Narcotics Problem in Connecticut. D. P. Griffin.—p. 91.
Professional Relations in Medical Care Insurance. T. J. Danaher.—p. 96.

16:153-226 (March) 1952

Surgical Methods in Treatment of Carcinoma of Cervix. L. Parsons.—p. 155.
Hernia Problem in Children (Review of 236 Hernias Treated in Two Waterbury Hospitals). R. A. Bonner Jr.—p. 160.
Detection of Clinically Unsuspected Carcinoma of Cervix in Office Practice by Vaginal Smear. R. C. Wright and D. A. Bristoll.—p. 162.
Present Status of Diagnosis and Treatment of Thyrocardiac Disease. C. K. Friedberg.—p. 164.
Are Veterans People? R. Warren.—p. 171.

Electroencephalography and Clin. Neurophys., Boston

4:1-128 (Feb.) 1952

Suppression-Burst Activity from Isolated Cerebral Cortex in Man. C. E. Henry and W. B. Scoville.—p. 1.
EEG Findings in Posterior Fossa Tumors. B. K. Bagchi, R. L. Lam, K. A. Kooi and R. C. Bassett.—p. 23.
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Relationship Between Reaction Time to Light and Latency of Blocking of Alpha Rhythm. J. S. Stamm.—p. 61.
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Gastroenterology, Baltimore

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Effect of Cortisone on Nontropical Sprue (Idiopathic Steatorrhea). A. B. Taylor, E. E. Wollaeger, M. W. Comfort and M. H. Power.—p. 203.
*ACTH in Severe Chronic Regional Enteritis: Observations in Four Patients. J. B. Kirsner, W. L. Palmer and A. P. Klotz.—p. 229.
Fasting Gastric Motility in Duodenal Ulcer Patients. W. H. Bachrach, J. Mason and H. M. Pollard.—p. 234.
Relation of Sustained Contraction of Duodenum to Nausea and Vomiting. F. K. Abbot, M. Mack and S. Wolf.—p. 238.
*Action of Banthine on Stomach and Duodenum of Man with Observations on Effects of Placebos. F. K. Abbot, M. Mack and S. Wolf.—p. 249.
Entero-Hepatic Circulation of Bromsulphalein: I. Studies on Man with Special Reference to Clinical BSP Test. S. H. Lorber and H. Shay.—p. 262.
Hemorrhage from Peptic Ulcer: Analysis of 223 Cases. B. D. Rosenak, R. H. Moser, C. Fisch and others.—p. 272.
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Study of Carbohydrate and Fat Absorption from Normal and Diseased Intestine in Man: I. Absorption and Excretion of D-Xylose. F. S. Brien, D. A. Turner, E. M. Watson and J. H. Geddes.—p. 287.
Id.: II. Changes in Serum Lipids in Man After Ingestion of Butter-Fat With and Without Tween 80 (Sorlate). F. S. Brien, D. A. Turner, E. M. Watson and J. H. Geddes.—p. 294.
Study of Gastric Secretion in Fasting Rats. D. E. Donald and C. F. Code.—p. 298.
Combined Amphetamine-Barbiturate Therapy in Gastro-Intestinal Disease. H. J. Dworken, S. M. Mellinkoff and T. E. Machella.—p. 304.
Vitamin Studies in Middle-Aged and Old Individuals: VII. Roentgenologic Studies of Gastrointestinal Tract in Patients with Hypovitaminemia B_1. R. W. Maxwell, M. Chieffi and J. E. Kirk.—p. 309.
Leiomyosarcoma of Gastrointestinal Tract. C. B. Ripstein and G. W. Flint.—p. 315.

Corticotropin in Chronic Regional Enteritis.—The improvement observed in some patients with chronic ulcerative colitis during administration of corticotropin suggested its use in regional enteritis. Clinical improvement accompanied the use of corticotropin in three instances but was partially maintained in only two. The beneficial effects of corticotropin were less pronounced than have been observed in ulcerative colitis.

Action of Methantheline on Stomach and Duodenum.—This report is a supplement to earlier ones on the effect of methantheline (banthine®) as an inhibitor of gastric function and as a general antispasmodic agent in the gastrointestinal tract. One series of experiments, carried out on a subject with a permanent gastric fistula whose gastric mucosa was accessible to direct observation, showed that methantheline inhibited gastric motor activity and gastric acid secretion in a relatively predictable fashion, depending on the prevailing situation in the stomach at the time of administration. In addition, the agent induced distinct pallor of the mucous membrane, with reduction of turgor and thinning of the rugae. Methantheline was not invariably effective in the amounts administered, but its effects were more consistent than were those of the placebos used for control. It is of interest that there was more reduction in gastric function following placebos that closely resembled methantheline than there was when no agent was administered. In the second series of experiments, 18 subjects were given methantheline while recordings of motor activity were obtained at appropriate intervals. In these subjects in both the stomach and duodenum there was evident a general inhibitory effect, not invariably, but far more consistently than was observed when no agent was introduced. In a subject with chronic active, persistently painful duodenal ulcer as much as 200 mg. of methantheline a day did not produce a noticeable inhibition of gastric function or reduction of pain. Increasing the dosage to 400 mg. daily, however, was well tolerated and apparently effective. It was concluded that methantheline is an inhibitor of gastric and duodenal motor activity, of gastric acidity, and of the hyperemia and engorgement that accompany hyperfunction in the stomach. In the management of duodenal ulcer it is a supplement to more fundamental therapy directed at the patient as a person.

Illinois Medical Journal, Chicago

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*Operation for Coronary Artery Disease. C. S. Beck.—p. 123.
Retinal Changes Associated with Hypertension and Arteriosclerosis. H. G. Scheie.—p. 126.
Surgical Problems and Management of Extravesical Ureteral Ectopia. B. E. Fillis and W. C. Meyer.—p. 129.
Gastric Ulcer—100% Indication for Gastrectomy? J. B. Kirsner.—p. 133.
Medical Men and Their Military Responsibility. C. F. Steinhoff.—p. 138.
Tuberculosis and Its Relation to Practicing Physician. E. A. Piszczek.—p. 143.
Gaucher's Disease in the Negro. F. Stansbury and S. O. Schwartz.—p. 145.

Operation for Coronary Artery Disease.—A two stage operation for coronary artery disease is described. The first stage consists of placing between the aorta and coronary sinus a graft of cephalic or basilic vein taken from the patient and inserting a piece of "orlon" thread beneath the coronary sinus where the sinus empties into the right auricle. In the second stage, which is done three weeks after the first stage, the "orlon" thread around the sinus is used as a partially occluding ligature of the sinus. This operation protects the heart in dogs after ligation of a major coronary artery. Experiments on dogs showed that the degree of protection is significant. In patients who are not too incapacitated the risk of operation should not be much greater than that of thoracotomy. Of 28 patients operated on since December, 1950, 23 recovered and 5 died, a mortality rate of 18%. The clinical result was satisfactory or better than satisfactory in patients who were given a patent graft. Most of these patients were free of pain, did not need any medication, and have returned to work. Four of the five patients who died had advanced degenerative disease. The fifth patient had unexplained necrosis of the graft. Of the 23 patients who recovered, 13 had both stages of the operation and 2 had only the first stage done. The graft was thrombosed in six and the graft was not placed in two. In several of these eight patients an alternate operation was done, consisting of abrasion of heart and pericardium with application of a chemical irritant to produce intercoronary communications. In these patients the follow-up period is too short to permit clinical evaluation. The author believes that the two stage operation of placing a vein graft between the aorta and coronary sinus should be used in patients who are not too severely incapacitated.

Journal of International College of Surgeons, Chicago

17:269-402 (March) 1952

Repair of Inguinal Hernia with Fascia Sutures. R. C. Austin and E. F. Damstra.—p. 269.
Newer Aspects of Pathology of Colon. H. Popper.—p. 286.
Repair of Secondary Cleft Lip and Nasal Deformity. F. A. Figi.—p. 297.
Uterine Bleeding: Its Significance. G. F. Douglas, G. C. Douglas and W. W. Douglas.—p. 306.
Practical Application of Sedation and Anesthesia in Obstetrics. J. S. Cohen.—p. 314.
Method for Quick Mobilization of Intrapancreatic Portion of Common Bile Duct. L. P. Good and P. E. Pemberton.—p. 321.
Spontaneous Abortions: Too Many or Too Few? M. P. Rucker.—p. 328.
Lymphoma of Spleen: Report of Case. K. C. Sawyer, W. A. H. Rettberg and F. J. McDonald.—p. 333.
Concomitant Splenectomy and Gastrectomy. S. W. Northup.—p. 338.
Extragenital (Mediastinal) Teratocarcinoma: Report of Case. J. Goorwitch and J. Sokol.—p. 343.
Treatment of Burns. C. H. Lupton.—p. 354.
Use of Tantalum Mesh in Nephropexy. K. D. Dietrich.—p. 369.
Multiple Heterogenous Carcinoma of Stomach. J. A. Teperson, L. S. Altman and B. Kogut.—p. 374.
Use of T Tube with Sleeve in Choledochostomy. D. T. Chechile.—p. 379.

Journal of Neurosurgery, Springfield, Ill.

9:117-234 (March) 1952

- Alfred Washington Adson—Pioneer Neurosurgeon. 1887-1951. W. McK. Craig.—p. 117.
- Familial Haemangiomata of Cerebellum: Report of Three Cases in Family of Four. H. O. Tonning, R. F. Warren and H. J. Barrie. —p. 124.
- *Sensory Changes with Herniated Nucleus Pulposus. L. Davis, J. Martin and S. L. Goldstein.—p. 133.
- Chordoma: Experience with 13 Cases. J. L. Poppen and A. B. King. —p. 139.
- *Nonobstructive Hydrocephalus. Treatment by Endoscopic Cauterization of Choroid Plexus. Long Term Results. J. E. Scarff.—p. 164.
- Vascular Lesions in Pituitary Adenomas. C. F. List, J. R. Williams and G. W. Balyeat.—p. 177.
- Pterional Meningiomas "En Plaque." F. Castellano, B. Guidetti and H. Olivecrona.—p. 188.
- New Operation for Relief of Pain in Angina Pectoris. J. T. Robson. —p. 197.
- Possible Use of Neutron-Capturing Isotopes Such as Boron^{10} in Treatment of Neoplasms: I. Intracranial Tumors. W. H. Sweet and M. Javid. —p. 200.

Sensory Changes with Herniated Nucleus Pulposus.—A study was made of the sensory changes in 500 consecutive patients with surgically verified herniated nucleus pulposus. In all but 38 myelography was performed and the lesion verified. Eighteen of the herniations were in the cervical region, 201 at the interspace between the fourth and fifth lumbar vertebrae, 234 at the interspace between the fifth lumbar and first sacral vertebrae, and the remainder at various levels throughout the spinal column or in multiple locations. Of the 500 patients, 327 had demonstrable sensory changes that were extremely variable. Herniations at the interspace between the fourth and fifth lumbar vertebrae alone produced 38 different patterns of sensory involvement varying from a small area of diminished sensation on the lateral aspect of the calf to hypalgesia of the entire thigh, leg, and foot. Of the 201 patients with herniated nucleus pulposus at the fourth or fifth lumbar interspace, only 138 had demonstrable sensory changes. Of these, 21 had sensory diminution involving the posterolateral aspect of the thigh and/or the calf, 51 had additional involvement of the dorsolateral aspect of the foot, while in 13 patients sensory diminution was limited to the dorsolateral aspect of the foot only. Seven patients had sensory changes on the anterior aspect of the thigh, leg and/or the dorsum of the foot, and 6 had involvement of the entire thigh, calf and/or foot. Five had bilateral involvement. The sensory changes in the remaining 37 patients were evenly distributed between other miscellaneous areas and did not fall into any of the categories mentioned above. No typical sensory pattern could be demonstrated for herniations at the fourth or fifth lumbar interspace. Likewise, herniations at the interspace between the fifth lumbar and first sacral vertebrae produced no typical pattern, and herniations could not be differentiated on the basis of sensory changes alone. These observations as well as those in 20 patients with multiple herniations verified at surgery and on 18 patients with herniated cervical nucleus pulposus showed no correlation between the sensory pattern and the level of the lesion. The extreme variability in the sensory pattern makes the method of devising a dermatome chart from the sensory changes in patients with herniated nucleus pulposus an unreliable one. While myelography is not necessary to establish the diagnosis of herniated nucleus pulposus, the authors believe that it is the most reliable method of localizing the lesion in the lumbar spine.

Treatment of Nonobstructive Hydrocephalus.—Endoscopic cauterization of the choroid plexuses was employed in the treatment of 39 infants with nonobstructive hydrocephalus. Of the 39 infants, 20 were operated on during the period of 1935 to 1941, and of these, 3 died in the hospital, 7 survived without permanent relief of intracranial pressure, and 10 survived with permanent relief of pressure. Of these last 10 children, 6 are still living and 3 of them have average mental development for their ages. Of 19 children operated on since 1946, 1 died in the hospital, 3 survived without permanent relief of intracranial pressure, and 15 survived with permanent relief of pressure. The follow-up periods for this second series are not yet long enough to determine the extent of the children's intellectual development, but results thus far indicate that 11 of them have average mental development for their ages. The most reliable sign of early hydrocephalus in infants is the state of the anterior fontanelle. In the normal healthy child, the fontanelle is slightly depressed and pulsates when the child is held in the sitting position and is not straining on crying. If the fontanelle bulges under these conditions, abnormal intracranial pressure must be suspected. If palpation reveals the fontanelle to be firm or tense, increased intracranial pressure is certain. The only absolute indication or contraindication for definite surgical treatment is the thickness of the remaining cerebral cortex as revealed by ventriculography, since cortical thickness is the most important single determinant of the intellectual potential of the infant. The author believes that a uniform cortical thickness of 2 cm. will usually assure an average intellectual development, whereas a cortical thickness of less than 1 cm. will preclude it.

J. Pharmacology & Exper. Therap., Baltimore

104:253-376 (March) 1952. Partial Index

- Effect of Some Compounds Related to Histamine on Gastric Acid Secretion. M. I. Grossman, C. Robertson and C. E. Rosiere.—p. 277.
- Spasmolytic Action of Bicyclic Basic Alcohol Esters. L. O. Randall, W. M. Benson and P. L. Stefko.—p. 284.
- Electroencephalographic Analysis of Side Effects of Spasmolytic Drugs. W. Schallek and T. H. F. Smith.—p. 291.
- Metabolic Demethylation of 3-Methyl-5-Ethyl-5-Phenyl Hydantoin (Mesantoin). T. C. Butler.—p. 299.
- Effect of Liver Injury and Nephrectomy on Anticonvulsant Activity of Clinically Useful Hydantoins. E. A. Swinyard, L. C. Weaver and L. S. Goodman.—p. 309.
- Action of Acetyl-Strophanthidin on Heart Muscle. A. M. Wedd and H. A. Blair.—p. 334.
- Blockade of Epinephrine-Induced Hyperglycemia. S. C. Harvey, C. Y. Wang and M. Nickerson.—p. 363.

Journal of Urology, Baltimore

67:129-234 (Feb.) 1952

- Prognosis of Renal Tuberculosis Treated by Nephrectomy. E. Ljunggren.—p. 129.
- Unilateral Pyelonephritis, Accompanied by Hypertension, Relieved by Nephrectomy. B. J. Hoffman, M. K. Bailey and C. A. Fort.—p. 132.
- Duodenal Fistula Following Right Nephrectomy. E. L. Caffery and M. M. Musselman.—p. 137.
- Plastic Operations on Ureter: Preliminary Report on End Results Following Various Methods of Anastomosis. E. S. Sayegh.—p. 143.
- Granuloma of Ureter. E. Felber.—p. 152.
- Squamous Cell Carcinoma Occurring in Stump of Chronically Infected Ureter Many Years After Nephrectomy. J. A. Loef and P. A. Casella. —p. 159.
- New Sigmo-Ureterostomoscope for Treatment of Implanted Ureter. A. H. Kleiman.—p. 164.
- Role of Ammonia Reabsorption in Acid-Base Imbalance Following Ureterosigmoidostomy. W. H. Boyce and S. A. Vest.—p. 169.
- Surgical Management of Patients with Incontinence of Anal Sphincter Following Ureterosigmoidostomy. T. H. Frazier and A. Hurwitz. —p. 179.
- Giant Vesical Calculus and Carcinoma of Bladder. J. H. Powers and R. G. Matflerd.—p. 184.
- Indications for Neurosurgical Establishment of Bladder Automaticity in Paraplegia. A. M. Meirowsky, C. D. Scheibert and D. K. Rose. —p. 192.
- Roentgen Diagnosis of Diseases of Prostate. N. P. G. Edling.—p. 197.
- Primary Malignant Neoplasms of Spermatic Cord and Epididymis: Two Case Reports. B. Sherwin and H. Bergman.—p. 208.
- Primary Carcinoma of Male Urethra: Case Report. L. E. McCrea and J. H. Furlong Jr.—p. 216.
- Calcification of Vas Deferens Associated with Paget's Disease of Bone. L. Narins and G. D. Oppenheimer.—p. 218.
- *Urogenital Tuberculosis: Review of 209 Surgically Treated Cases. A. J. Greenberger and M. E. Greenberger.—p. 222.
- Use of Sterilizable Goggles in Cystoscopic and Transurethral Procedures. J. H. Kiefer.—p. 232.

Urogenital Tuberculosis: 209 Surgically Treated Patients.—The Greenbergers point out that urogenital tuberculosis in a hospital solely devoted to the treatment of tuberculosis presents a problem entirely different from that in a general hospital, because in most instances in a tuberculosis institution urogenital tuberculosis is secondary to and develops while the patient is under treatment for another form of tuberculosis (chronic pulmonary and skeletal tuberculosis). The problem of the treatment in multiple system tuberculosis is often a complicated one, since in some cases three organs may require active treatment. This paper presents the results of an 18 year follow-up study on 209 patients operated on for renal and epididymal tuberculosis. An epididymectomy was done in 105 cases, a nephrectomy in 63, and in 41 both an epididymectomy and nephrectomy were done.

Chronic pulmonary tuberculosis was also present in 50.0% of the nephrectomy and 70.6% of the epididymectomy cases; associated bone tuberculosis occurred in 23.1% of the patients with renal tuberculosis and in 24.6% of the cases with genital tuberculosis. Postoperative sinuses developed in 38.4% of the nephrectomy series and 22.6% of the epididymectomy series. There were 49.9% known deaths in this series. The chief cause of death in both the nephrectomy and epididymectomy patients was chronic pulmonary tuberculosis. Uremia was a more frequent cause of death following nephrectomy, while tuberculous meningitis was a more frequent occurrence after epididymectomy.

North Carolina Medical Journal, Winston-Salem

13:53-108 (Feb.) 1952

SYMPOSIUM ON BRONCHOPULMONARY LESIONS

Bronchopulmonary Segmentation and Its Clinical Importance. G. J. Baylin and J. E. Wear.—p. 53.
Bronchogenic Carcinoma as Medical Problem. A. D. Cooper.—p. 61.
New Significance of Pulmonary Necrosis. F. R. Gilmore.—p. 63.
Surgical Management of Carcinoma of Lung. H. M. Schiebel and E. R. Taylor.—p. 67.

Use of Pitressin in Treatment of Schizophrenia with Deterioration. L. Forizs.—p. 76.
Simplified Technique for Staining Vaginal Smear for Immediate Appraisal of Endocrine Activity. J. P. U. McLeod.—p. 80.
Cystic Lesions of Bone with Particular Reference to Endocrine Dysfunction. E. E. Pautler Jr.—p. 85.
*Epidemic Hemorrhagic Fever. B. B. Monroe.—p. 91.
Chronic Thyroiditis: Clinicopathologic Study. J. M. Van Hoy.—p. 93.

Epidemic Hemorrhagic Fever.—Epidemic hemorrhagic fever—also known as Manchurian Songo fever—is an acute infectious disease of unknown etiology that has not hitherto been described in the American medical literature. Approximately 250 cases, however, have been diagnosed in United Nations troops fighting in Korea since the first case was recognized in June, 1951. The acute phase of the disease lasts from 8 to 10 days and is characterized by a multiplicity of symptoms. The most important single diagnostic feature is the presence of bilateral subconjunctival hemorrhages. Approximately 25% of the patients with epidemic hemorrhagic fever have malaria (Plasmodium vivax) that is confirmed by laboratory studies. Although hemorrhage may be found in all organs at autopsy, the hemorrhagic involvement of the posterior pituitary gland, which is found in all fatal cases, is believed to be most significant. The disease is fatal in 20 to 30% of the cases, but the majority of patients make a complete recovery after three to four weeks. Treatment at present consists of administration of vitamins K and C, the use of convalescent blood during the acute phase, and the withholding of parenteral fluids.

Northwest Medicine, Seattle

51:95-180 (Feb.) 1952

Systemic Effects of Fluorides in Dosage Levels Recommended to Prevent Dental Caries. L. Powers.—p. 115.
Experiences with Retropubic Prostatectomy. L. J. Scheinman.—p. 118.
Planning for Better Nursing Care. H. H. Smith.—p. 120.
Cryptococcus Meningitis: Report of Two Cases. E. C. Palmrose and E. J. Losli.—p. 121.

Psychiatry, Washington, D. C.

15:1-110 (Feb.) 1952. Partial Index

Role of Psychiatry and Social Sciences in World Affairs: Address. J. R. Rees.—p. 1.
Concepts Found Useful in Treatment of Schizoid and Ambulatory Schizophrenic Patients. F. Powdermaker.—p. 61.
Dynamics in Accident-Prone Behavior. L. L. LeShan.—p. 73.
Psychoanalysis as Research Technique. W. Seeman.—p. 81.

Review of Gastroenterology, New York

19:101-172 (Feb.) 1952

Nutritional Disturbances in Visceroptotic Patients. G. G. Duncan and B. Beidelman.—p. 111.
Treatment of Intestinal Infections Associated with Low Grade Pathogenic Bacteria. A. Milzer, H. MacLean and N. McElwaine.—p. 122.
Gallbladder Disease. B. C. Lockwood.—p. 144.
Roentgenographic Evaluation of Common Measures Employed in Treatment of Colonic Stasis. H. Barowsky.—p. 154.

Science, Washington, D. C.

115:129-156 (Feb. 8) 1952. Partial Index

*Importance of Atmospheric Oxygen for Maintenance of Optical Properties of Human Cornea. G. K. Smelser and V. Ozanics.—p. 140.
Effect of Choleretic and of Hydrocholeretic Agents on Bile Flow and Bile Solids in Isolated Perfused Liver. R. W. Brauer and R. L. Pessotti.—p. 142.
Effect of Heparin on Growth of Transplantable Lymphosarcoma in Mice. L. Kreisler.—p. 145.
Influence of Vitamin D on Deposition of Gallium in Bone of Rat. H. C. Dudley and L. Friedman.—p. 146.
First Report of Presence of Dermatitis-Producing Marine Larval Schistosome in Hawaii. G. W. T. C. Chu.—p. 151.

Atmospheric Oxygen and Optical Properties of Cornea.—It is well known that ordinary contact lenses interfere with the optical qualities of the cornea, as evidenced by increasing haze in the vision and by diffraction phenomena (halos) about light sources. The changes are reversible. In a study of the mechanism of these changes the fact that contact lenses prevent the access of the cornea to atmospheric oxygen was obvious. To determine whether the cornea remains optically normal under relatively anaerobic conditions, four subjects were fitted with diving goggles in which the eyes could be exposed to various gas mixtures. The data obtained suggest that contact lens halos are caused by oxygen deficiency under the lens. Contact lenses equipped with stoppered openings and fitted to the four subjects were found to cause definite halos in one and a half hours. Addition of N_2 bubbles to the contact lens fluid did not affect halo development, but the introduction of oxygen bubbles under the lens prevented the appearance of halos in experiments lasting seven hours. During an experiment the bubbles became reduced in size, indicating that the cornea utilized the oxygen.

South Dakota J. Med. & Pharmacy, Sioux Falls

5:37-70 (Feb.) 1952

Cervico-Brachial Pain. R. W. Newman.—p. 37.
Bronchogenic Carcinomas Simulating Benign Lesions. C. A. Good.—p. 51.
Complicated Fracture of Hip (Case Report). D. H. Manning.—p. 55.

5:71-94 (March) 1952

Placenta Previa: X-Ray as Aid in Diagnosis and Treatment. J. T. Murphy.—p. 71.
Post Maturity: Problems Relative to Prolonged Pregnancy. C. A. Stern.—p. 76.
Skin Whealing for Analgesic Purposes; Valuable Addition in Traumatology. E. R. N. Grigg.—p. 79.

Virginia Medical Monthly, Richmond

79:63-120 (Feb.) 1952

General Management of Cerebral Palsy Problem. W. M. Phelps.—p. 65.
Use of Adrenal Cortical Hormone in Alcoholism: Report of 100 Consecutive Cases. R. G. McAllister.—p. 70.
Infectious Mononucleosis: Clinical Analysis of 210 Sporadic Cases. J. E. Stevens.—p. 74.
What is the Role of Non-Psychiatric Physician in Management of Emotional Stress? C. G. Craddock Jr.—p. 81.
Mediastinal Tumors: Roentgen Diagnosis. F. B. Mandeville.—p. 89.
Mumps Meningoencephalitis. R. Thaggard and L. E. Sutton Jr.—p. 92.
Fracture Dislocation Sterno-Clavicular Joint: Case Report. R. D. Betterworth and A. A. Kirk.—p. 98.
Review of Slave Care on Southern Plantations. W. D. Postell.—p. 101.

West Virginia Medical Journal, Charleston

48:35-58 (Feb.) 1952

Management of Patients with High Blood Pressure. J. M. Hutcheson.—p. 35.
Common Orthopedic Problems Which Can be Managed in Office of General Practitioner. H. R. McCarroll.—p. 39.
Hypertension. LeR. H. Sloan.—p. 44.
Maternal Deaths in West Virginia, 1950. N. H. Dyer.—p. 49.

48:59-82 (March) 1952

Relation of Ovarian Hormones to Tumors of Female Genital Tract. E. Novak.—p. 59.
Chronic Recurrent Intestinal Obstruction Due to Adhesions (Methods of Surgical Management). V. S. Skaff and L. B. Thrush.—p. 64.
Present Concepts in Treatment of Hyperthyroidism. A. S. Jackson.—p. 67.

FOREIGN

Acta Paediatrica, Stockholm

41:1-100 (No. 1) 1952. Partial Index

Program for Premature Infants in Gothenburg, Sweden; Principles of Treatment and Results Obtained. K. Holmdahl.—p. 1.
*Congenital Toxoplasmosis. S. Gard, J. H. Magnusson and E. Hagberg. —p. 15.
Studies on Carbonic Anhydrase Activity in Children: I. Enzyme Activity in Blood of Infants and Children of Different Ages, Particularly in Premature Infants. R. Berfenstam.—p. 32.

Congenital Toxoplasmosis.—The occurrence of congenital toxoplasmosis is reported in one baby boy and four baby girls. In one of the infants who was studied during the active stage of the infection, manifested by hydrocephalus, chorioretinitis, and mild spasticity, ventricular puncture was carried out. Toxoplasma-like bodies were observed in the ventricular fluid, and typical toxoplasmosis was produced in mice and guinea pigs by inoculation with the ventricular fluid. In the four other infants the infection varied in severity, and diagnosis was based on the results of Sabin and Feldman's quantitative dye test and complement-fixation tests. The results of the two methods agreed fairly well. A sixth infant is reported on that was born three weeks before term by breech delivery and died 20 minutes after birth. Necropsy revealed a large diaphragmatic hernia. A rabbit skin test done with a blood sample from the mother was negative. Three months later a Sabin-Feldman dye test was done with the same blood sample and a toxoplasmin titer of 1:3,200 was obtained. It was then too late to decide whether a toxoplasma infection of the infant had occurred and might have played a part in producing the diaphragmatic abnormality. A follow-up study for 9 months to 10 years on six mothers of infants with diaphragmatic hernia failed to yield evidence in support of the theory that toxoplasmosis might be the cause of this malformation.

Acta Tuberculosea Scandinavica, Copenhagen

26:1-174 (No. 1-2) 1952. Partial Index

Influence of Elasticity of Lungs on Movements of Heart. E. Rist.—p. 1.
Reliability of Reading of Photofluorograms and Value of Dual Reading. E. Groth-Petersen, A. Løvgreen and J. Thillemann.—p. 13.
*Resistance of Tubercle Bacilli to Streptomycin. H. J. Corper and M. L. Cohn.—p. 92.
Erythema Nodosum and Subsequent Tuberculosis; Follow-Up Study of 575 Cases. A. S. Johannessen.—p. 138.

Resistance of Tubercle Bacilli to Streptomycin.—Guinea pigs were given injections of fine suspensions of streptomycin-sensitive or streptomycin-resistant virulent human tubercle bacilli originating from the same strain. Then these same suspensions were mixed to contain both streptomycin-sensitive and resistant cultures and were injected intravenously in nonimmune guinea pigs. To suppress the sensitive bacilli, the animals were treated with 25 mg. of streptomycin daily for 30 to 60 days. Results obtained verified those obtained in vitro in previous dilution extinction experiments (twilight zone tests). When a small number of virulent human tubercle bacilli (sensitive or resistant to streptomycin) were injected intravenously in the guinea pigs, discrete tubercles tended to develop in the spleen, while when many streptomycin-sensitive bacilli were injected into the animals treated with streptomycin, a diffuse tuberculous splenomegaly resulted. When many streptomycin-sensitive bacilli and a few streptomycin-resistant bacilli were injected in the nonimmune guinea pigs, following streptomycin treatment discrete splenic tubercles developed in addition to diffuse tuberculous splenomegaly. It is suggested that streptomycin resistance in mammalian tubercle bacilli appears to be a phenomenon of adaptation resulting from contact with the streptomycin rather than a phenomenon of persistence of preexisting resistant bacilli. In the nonimmune guinea pig the suppression of virulent mammalian tubercle bacilli by relatively large amounts of streptomycin results in development of specific tuberculoimmunity. This immunity is a significant effect of streptomycin treatment of these animals and is important in the retardation of the disease following discontinuation of the drug. In the guinea pigs this immune effect is displayed against the streptomycin-resistant bacilli. The specific tuberculoimmunity is a factor in recovery from tuberculosis.

Archives of Disease in Childhood, London

27:1-112 (Feb.) 1952

Chronic Maxillary Sinusitis in Children. J. F. Birrell.—p. 1.
Assessment of Growth and Development in Children. J. M. Tanner. —p. 10.
Familial Crisis in Congenital Acholuric Jaundice. W. N. Ingham.—p. 34.
Familial Jaundice of Newborn Associated with Hepatosteatosis. A. Holzel and N. Sher.—p. 37.
Relation of Blood Pressure to Weight, Height and Body Surface Area in School-boys Aged 11 to 15 Years. L. Hahn.—p. 43.
*Unilateral Limb Lengthening Associated with Haematogenous Osteitis in Childhood. W. M. Dennison.—p. 54.
Method of Assessing Maternal Efficiency for Socio-Medical Surveys. E. J. Thwaites and I. Sutherland.—p. 60.
Tryptic Activity and Presence of Cornified Squames in Meconium as Diagnostic Aid in Congenital Intestinal Obstruction. J. L. Emery. —p. 67.
Fibrocystic Disease of Pancreas with Meconium Peritonitis at Birth. F. W. Nash and J. F. Smith.—p. 73.
Chylous Ascites in Infancy. I. Kessel.—p. 79.
Vascular Abnormalities Associated with Pseudoxanthoma Elasticum. H. H. Wolff, J. F. Stokes and B. E. Schlesinger.—p. 82.
Case of Tricuspid Atresia with Transposition of Great Vessels. C. F. Ross.—p. 89.
Venous Thrombosis in Acute Infantile Hemiplegia. R. G. Mitchell. —p. 95.
Lobstein's Syndrome. C. M. Ottley.—p. 105.
Pneumonia and Empyema in Children. D. Macaulay.—p. 107.

Unilateral Limb Lengthening and Hematogenous Osteitis in Childhood.—Thickening of a long bone following pyogenic inflammation is well known, but there is little recent literature describing lengthening following prolonged bone infection. In a recent series of 100 cases of acute hematogenous osteitis treated with penicillin, the disease affected a long bone in 84 cases. Measurable increase in length of the affected limb occurred in 20 cases. Although limb lengthening is most commonly a sequel to hematogenous osteitis, increase in length of the lower limb was associated with the following conditions at a children's hospital during the past five years: simple transverse fracture of the femur, diffuse angiomatous condition of one leg (congenital arteriovenous fistulae), recurrent hemarthrosis of one knee in a child with hemophilia, severe lacerations of the thigh and calf, synovial tuberculosis of the hip, and with congenital neurofibromatosis. In all these conditions there is a common factor of increased blood supply. The overactivated growth stimulated by the increased blood supply gradually decreases, and in an actively growing child a moderate increase in length (up to 2 cm.) is corrected within five years. A growing child may compensate for a long lower limb by such postural defects as scoliosis and genu valgum, and the patient must be observed constantly since such deformities develop insidiously if elevated footwear is not supplied for the normal leg.

Archivum Chirurgicum Neerlandicum, Arnhem

3:253-346 (No. 4) 1951

*Lobectomy, Segmental Resection and Pneumonectomy for Tuberculosis (with Reference to 437 Cases of Pulmonary Resection). L. D. Eerland. —p. 253.
Open Omphalomesenteric Duct. J. ten Kate.—p. 305.
Pre-Auricular Fistula. L. W. van Ouwerkerk.—p. 315.
Regenerative Power and Reserve Capacity of Liver in Bile Duct Operations. L. Schalm.—p. 322.
Embolic Liver Abscess Following Acute Appendicitis. H. B. Lodewijks. —p. 333.

Pulmonary Resection for Tuberculosis.—In this paper 437 pulmonary resections performed for tuberculosis since 1943 are reported. There were 154 cases of lobectomy, 108 of segmental resection, 11 in which lobectomy and segmental resection were combined, and 164 cases of pneumonectomy. Postoperative mortality was 2.5% (11 cases), and nine additional patients died later. The sputum had become negative in 284 of 305 who could be traced in June, 1951, and 275 of these 305 patients felt well and 28 fairly well, and two had a poor prognosis. A total of 213 had returned home, whereas 92 were still in the sanatorium; 198 had been able to resume their work. The author stresses the importance of a sufficiently prolonged sanatorium treatment after the resection, because the operation is only one part of the therapeutic plan. In most cases measures must be taken to prevent excessive expansion of the remaining pulmonary tissues, which may require thoracoplasty or an intrathoracic plastic prosthesis. The author defers his judgment about segmental resection in tuberculosis until observation has demonstrated that the greater postoperative difficulties involved in this operation are compensated by better pulmonary function than can be obtained with lobectomy.

British Journal of Dermatology, London

64:43-86 (Feb.) 1952. Partial Index

Nervous and Chemical Control of Sweating. T. M. Chalmers and C. A. Keele.—p. 43.
Liquid Nitrogen in Treatment of Warts. J. K. Morgan.—p. 55.

British Journal of Ophthalmology, London

36:57-112 (Feb.) 1952

Peri-Orbital Tumours. C. Wakeley.—p. 57.
Binocular White from Red and Green, and Three-Component Theory. G. L. Walls.—p. 67.
Influence of Terramycin on Course of Experimental Ocular Tuberculosis: Comparative Activity of Terramycin, Streptomycin, and Both Antibiotics Combined. G. Lepri and S. Capalbi.—p. 75.
Ocular Onchocerciasis. J. W. R. Sarkies.—p. 81.
Pacchionian-Like Bodies in Human Canal of Schlemm. E. Wolff.—p. 100.

British Journal of Surgery, Bristol

39:289-384 (Jan.) 1952. Partial Index

*Late Results from Disk Operations: Present Employment and Residual Complaints. A. L. Eyre-Brook.—p. 289.
Carcinoma of Male Breast: Report of 19 Cases and Review of Literature. P. Somerville.—p. 296.
Benign Ulcers of Greater Curvature Associated with Ulcerative Colitis and Cirrhosis of Liver. R. B. Welbourn.—p. 303.
Skin-Covered Spout Ileostomy. C. A. Wells.—p. 309.
Primary Carcinoma of Ureter. J. C. Campbell.—p. 310.
Primary Epithelial Tumours of Ureter: Report of Three Cases. W. W. Wiggins-Davies and J. S. Elwood.—p. 313.
Primary Carcinoma of Male Urethra: Case Report and Review of Literature. A. Elton.—p. 316.
Formation of Inclusion Dermoid Cysts Following Whole-Thickness Skin-Graft Repair of Hernia. S. H. C. Clarke.—p. 346.
Perforation of Intestine by Swallowed Foreign Bodies, with Report of Two Cases of Perforation by Rabbit Bones. J. N. Ward-McQuaid.—p. 349.
Preserved Infant's Aorta in Treatment of Popliteal Aneurysm. P. Martin and R. B. Lynn.—p. 352.
Bronchial 'Adenoma' Treated by Local Resection and Reconstruction of Left Main Bronchus. A. L. D'Abreu and S. J. MacHale.—p. 355.
Benign Chondroblastoma of Bone. W. G. France.—p. 357.
Soft Tissue Involvement in Multiple Myelomatosis. T. G. I. James and E. A. Turner.—p. 361.
Herniation of Stomach, Transverse Colon, and Portion of Jejunum into Pericardium. G. R. Crawshaw.—p. 364.
Pigmented Adamantinomata. R. J. V. Battle, J. H. Hovell and H. Spencer.—p. 368.
Simplified One-Stage Method of Cranioplasty with Acrylic Resin. G. Blaine and L. C. Oliver.—p. 371.
*Precocious Sexual Development Due to Interstitial-Cell Tumour of Testis. G. H. Newns.—p. 379.

Late Results from Disk Operations.—Eyre-Brook presents follow-up observations on 123 patients operated on because of a diagnosis of prolapsed intervertebral disk. The minimum period of follow-up was one year and the maximum four and one-half years. Six patients could not be traced. Among the remaining 117 patients the disk prolapse was confirmed in 99 cases; 1 patient had an intradural xanthoma, 6 had only adhesions, and 11 had no abnormal changes. Operation consisted only of removing degenerated disk material; fusion was not done in any of the cases. No explanation is offered for the primary changes in the disk, but the author suggests that stresses of the erect position are sufficient to cause protrusion of the disk in most cases. The term "slipped disk" gives a grossly distorted impression; the prolapsed material cannot slip back. Spontaneous cure occurs by the stretching of the nerve or rupture of the prolapsed disk, resulting in complete extrusion of the contents. Improvement may occur with alteration in the relationship of the nerve to the prolapse by a manipulation, but manipulation no doubt usually results in stretching the nerve or rupturing the enveloping ligament. The roentgenologic examination confirmed the diagnosis in 41% of the patients, failed to confirm it in 47%, and was misleading in 12%. The tension signs of straight leg raising and list were at least as reliable as neurological signs in arriving at a correct diagnosis. In seven cases there were complications from the operation, but four patients recovered completely. Eighteen of the 21 patients with prolapsed disks whose occupations involved considerable exertion such as in farming or truck driving were able to resume their former occupations and seemed to have made a complete recovery. Only one of the 11 patients in whom the exploration had been negative recovered completely; the others retained their complaints, wholly or in part, and subsequent observation has not as yet revealed the cause of their sciatica. Only definite prolapses of the disk were considered in this series, and the author suggests that the scarred, hidden, or occult disk prolapse may in later years receive no more attention than does the thickened ligamentum flavum today, although the latter was once held to explain many of those cases with indefinite findings at operation.

Precocious Sexual Development Due to Testicular Tumor.—A boy was hospitalized at the age of 2 years and 4 months for treatment of testicular tumor. He had developed normally until six months previously, when the mother had noticed that his penis was rather large. His voice became deep and rough. Pubic hair had appeared two months previously. For six months he had been growing rapidly, and his general physique and muscular development had increased. His behavior was normal for his age, and he was happy and good-tempered. At an outpatient clinic it was noted that the right testicle was large. Examination at the time of hospitalization revealed that the bone age was approximately 8 years. The testicular tumor was excised. The removed testicle was large, and on bisection an ovoid nodular firm mass was found to have replaced almost the entire testicle. A thin shell of rete and epididymis was stretched over the tumor mass. Several thin radiating fibrous septums were seen to traverse the cut surface of the tumor. On histological examination the tumor had the appearance of a benign interstitial cell tumor. The urinary ketosteroid excretion, which was considerably above normal before operation, fell to normal one week after operation. Eighteen months later the child was well. His penis had become slightly smaller and the pubic hair had disappeared, but his muscular development and deep voice were unchanged and he had grown several inches in height. Sexual precocity due to interstitial testicular tumor is rare, this being the ninth case reported. Most cases of sexual precocity result from hyperplasia or tumor of the adrenal cortex.

British Medical Journal, London

1:449-502 (March 1) 1952

Studies on Physiology of Awareness: Anoxia and Levels of Sleep. J. W. L. Doust and R. A. Schneider.—p. 449.
Symptomatology of Congestive and Simple Glaucoma: Study in Contrast. S. J. H. Miller.—p. 456.
Cephalic Tetanus, with Report of Case. L. Bagratuni.—p. 461.
Estimation of Trypsin in Duodenal Juice. I. Gordon, B. Levin and T. P. Whitehead.—p. 463.
Acute Idiopathic Paroxysmal Cold Haemoglobinuria of Non-Syphilitic Type in a Child. W. P. Sweetnam, E. F. Murphy and R. C. Woodcock.—p. 465.
Intra-Articular Streptomycin in Tuberculosis of Knee. R. T. Ahern and G. P. Arden.—p. 466.
Angioma Venosum Racemosum with Angiomatous Lesions of Skin and Omentum. I. Gilbert.—p. 468.

1:503-558 (March 8) 1952

Coronary Heart Disease in Medical Practitioners. J. N. Morris, J. A. Heady and R. G. Barley.—p. 503.
Herpes Zoster Varicellosus. D. I. McCallum.—p. 520.
*Pulmonary Aspergillosis Following Post-Influenzal Bronchopneumonia Treated with Antibiotics. J. D. Abbott, H. V. J. Fernando, K. Gurling and B. W. Meade.—p. 523.
Peripheral Neuritis in Systemic Lupus Erythematosus. R. H. Heptinstall and G. S. C. Sowry.—p. 525.
Follow-Up Study of 238 Leucotomized Patients. H. Gillies, B. Hickson and W. Mayer-Gross.—p. 527.
*Familial Erythema Nodosum. J. Fry.—p. 529.
Negative Benzodioxane Test in Presence of Phaeochromocytoma. H. P. Tulloh.—p. 531.

Pulmonary Aspergillosis Following Antibiotic Treatment.—Abbott and associates present the case of a woman, aged 51, who was treated with penicillin, streptomycin, and chloramphenicol for postinfluenzal bronchopneumonia. At postmortem examination Aspergillus fumigatus infection of the lungs was discovered. This case is interesting because of rapid development of a cavitating bronchopneumonia while massive doses of antibiotics were being administered. The extent of the lung disease as shown radiologically was greater than was expected from the physical signs, but was in keeping with her progressively deteriorating condition. The necropsy findings confirmed the presence of bronchopneumonic consolidation and cavitation in the upper lobe of the left lung, the wall of which was lined with mycelium. Mycelium was also found in other parts of the lung. Recent reports have shown the frequent association of fungus infection with antibiotic therapy. It has been suggested that suppression of bacteria usually competing for food with the coexisting Candida albicans is probably the most important factor in the development of these infections. The disturbance of vitamin synthesis due to alteration of bacterial flora in the gastrointestinal tract may also be of importance.

Familial Erythema Nodosum.—Fry defines erythema nodosum as a clinical entity consisting of a characteristic skin eruption, usually accompanied by a general constitutional disturbance. Although the etiology is not fully explained as yet, the general consensus is that it is a nonspecific reaction of a sensitive subject to various allergens. It is probable that erythema nodosum is associated oftenest with the primary tuberculous complex, but acute rheumatism, streptococcal infection, sarcoidosis, coccidioidomycosis, sulfonamide, hypersensitivity and a number of other conditions such as septicemia have also been observed with erythema nodosum. Fry describes a family with three children, aged 7, 5 and 3 years; the mother and the two older children had erythema nodosum lesions some weeks after bilateral open tuberculosis was diagnosed in the father. It seems certain that in the two children the development of a positive tuberculin skin reaction accompanying a primary tuberculous infection was associated with an eruption of erythema nodosum. This is also likely in the mother, but cannot be proved because there was no previous skin test. The author cites previous reports describing similar series of cases, and says that it seems likely that most of these multiple cases of erythema nodosum have been associated with a primary tuberculous infection.

Geburtshilfe und Frauenheilkunde, Stuttgart

12:193-288 (March) 1952. **Partial Index**

The Lewis Blood Factor as Cause of Recurrent Abortions. H. Elbel, O. Prokop and F. Schleyer.—p. 204.
Protein Therapy of Late Toxicoses and Their Physiological Foundations. L. Heller.—p. 207.
Experiences with Interruption of Pregnancy and Sterilization in Familial Erythroblastosis. P. Dahr.—p. 218.
Serologic Diagnosis of Toxoplasmosis. H. Kirchhoff and H. Kräubig. —p. 228.
*Demonstration of Trichomonas Vaginalis Including Dead and Degenerated Forms with Phase-Difference Microscope. W. Bommer.—p. 234.
New Sign of Intrauterine Death of Fetus and Prenatal Diagnosis of Postmaturity. C. Dolff.—p. 244.
Tuberculosis of Endometrium and Term Pregnancy. H. Nevinny-Stickel. —p. 256.

Demonstration of Trichomonas Vaginalis with Phase-Difference Microscope.—Although the problem of vaginal trichomoniasis has not been completely explained, the following factors support the concept of the pathogenicity of Trichomonas vaginalis: 1. Trichomonads are frequently found in severe chronic colpitis. 2. Skin tests have proved the passage of antigens from trichomonads into the body as a whole, and it is felt that this would explain the frequent systemic manifestations in trichomonas colpitis. 3. Treatment directed specifically against the trichomonads frequently cures severe and prolonged disorders. These observations have aroused demand for a reliable method of demonstrating trichomonads. Since the phase-difference microscope improved the visualization of unstained objects, it seemed advisable to resort to this method of microscopy in the search for trichomonads. Bommer describes the technique of the examination of a drop of undiluted vaginal secretion. He shows that living trichomonads can easily be recognized from the swimming and whipping movement of the flagella and from the constantly active undulating membrane. Reproductions of photomicrographs show not only living but also degenerating forms of trichomonads and their appearance in contrast to other forms in the vaginal secretions such as epithelial cells, leukocytes, erythrocytes, and bacteria. The reproduced photomicrographs do not do full justice to the possibilities of the phase-difference microscope, because the photograph reproduces only those parts of the object that happen to be at the same level, while the observer, with the aid of the micrometer screw, is able to observe details at various levels. Thus the diagnostic reliability during actual observation is even greater than is revealed in the photographs.

Journal of Neurol., Neurosurg. & Psychiatry, London

15:1-72 (Feb.) 1952

Posterior Fossa Dermoid Cysts with Special Reference to Intracranial Infection. V. Logue and K. Till.—p. 1.
Cerebral Poliomyelitis in Early Infancy. V. Smallpeice and C. Ounsted. —p. 13.
Neuropathies Caused by Bony Spurs in Cervical Spine with Special Reference to Surgical Treatment. K. L. Allen.—p. 20.
Tridione Compared with Malidone in Treatment of Petit Mal. A. J. M. Butter.—p. 37.
Cognitive Factors in Epilepsy. M. Davies-Eysenck.—p. 39.
Herpes Zoster Ophthalmicus and Post-Herpetic Neuralgia. W. F. T. Tatlow.—p. 45.
Effect of Denervation on Nail Growth. S. Sunderland and L. J. Ray. —p. 50.
Memory Defects After Head Injury. M. Williams and O. L. Zangwill. —p. 54.
Pulse-Wave Electrocoma. E. R. Strauss, J. Gould and A. MacPhail. —p. 59.
Prolonged Compression of Brain Resulting from Extradural Haemorrhage. G. F. Rowbotham and N. Whalley.—p. 64.

Lancet, London

1:475-520 (March 8) 1952

*Anterior Cingulectomy in Treatment of Mental Disease. C. W. M. Whitty, J. E. Duffield, P. M. Tow and H. Cairns.—p. 475.
*Dietetic and Other Methods in Treatment of Peptic Ulcer. J. S. Lawrence. —p. 482.
Comparison of Radioactive and Metabolic Methods of Investigating Thyroid Function. J. B. Foote, D. H. Mackenzie and N. F. Maclagan. —p. 486.
Dicoumarol in General Practice. R. A. M. Scott.—p. 488.
Further Experiments on Prevention of Motion Sickness. E. M. Glaser and G. R. Harvey.—p. 490.

Anterior Cingulectomy in Mental Disease.—Attempts have been made to find a more satisfactory operation than frontal leukotomy for mental disease. Whitty and associates report the results of bilateral removal of the anterior half of the cingular gyrus in 29 patients with mental disease. One death resulted from this operation. The first 24 patients of this group (16 with advanced psychosis and 8 with mental illness in a basically sound personality) have been followed for some 18 months to 3 years. Changes in the mental illness followed in the majority of the cases. In the psychotics, however, this was transient, and no worth-while improvement was maintained. Definite improvement occurred in six of the other eight cases. In two of these patients who had severe obsessional and anxiety states improvement was so great and sustained that the patients are at present regarded as cured. A striking feature was the slight degree of undesirable personality change of the type sometimes seen following leukotomy. It is suggested that this operation requires further trial in certain types of mental illness marked by obsessions, tension, and anxiety, in which the basic personality is well preserved.

Medical Treatment of Peptic Ulcer.—Lawrence made controlled studies of medical treatment of 140 patients with duodenal, gastric, or anastomotic ulcers. Antacids produced a greater and more rapid relief of pain than a placebo. Given in the usual therapeutic doses, the antacids in the order of effectiveness were magnesium trisilicate, magnesium carbonate, and aluminum hydroxide. Alternate patients were given an ulcer diet of the Lenhartz type. The controls ate the normal hospital meals. Although the acid and pepsin content of the gastric contents was better controlled in those receiving the Lenhartz regime, the ulcer took six days longer to heal (64 and 58 days, respectively). The duration of pain and epigastric tenderness and the disappearance of occult blood from the stools was similar in treated and control groups, but the average gain in weight was greater in the controls. Twelve patients received milk through an esophageal tube by continuous drip at night, and these were compared with 13 patients not so treated. The pain subsided more rapidly in the treated patients (22 days against 27 in the controls), but the time of healing was only two days shorter. The healing period for 11 patients not confined to bed was 22 days longer than for the patients treated by complete rest in bed, and the pain took 12 days longer to subside. It is concluded that the dietetic treatment of peptic ulcer as at present practised does not hasten healing and may delay it. Patients with peptic ulcer should have an unrestricted diet of three full meals each day. In addition 10 oz. of milk should be taken twice daily (between meals and before going to sleep). Antacids should be given every two hours during the day and during the night, if the patient is awake. The patient should be kept in bed until the pain has completely subsided, and then allowed up for an hour each day until the ulcer appears to be healed on roentgenograms. On discharge patients should be instructed that not more than four hours should elapse between meals, and preferably not more than three hours. Milk may be substituted if a meal is not available, but smoking should not be used to allay hunger.

Medical Journal of Australia, Sydney

1:169-204 (Feb. 9) 1952

*Poliomyelitis and Murray Valley Encephalitis: Comparison of Two Neurotropic Virus Diseases. F. M. Burnet.—p. 169.
Mortality in Australia from Acute Infective Disease. H. O. Lancaster.—p. 175.
Observations on Incidence and Composition of Urinary Calculi, H. S. H. Wardlaw.—p. 180.
Tuberculosis and the General Practitioner. P. Woodruff.—p. 186.

Poliomyelitis and Murray Valley Encephalitis.—The epidemiology of the two important diseases in Australia known to be due to neurotropic viruses, poliomyelitis and Murray Valley encephalitis, is discussed by the author using the ecological approach. Both poliomyelitis and Murray Valley encephalitis represent the visible result of infections that affect many more persons without producing any sign of serious illness. In most persons multiplication and spread of the virus is limited by a series of obstacles not yet well understood, and few or no symptoms result. Sufficient multiplication of the virus, however, occurs to provoke an immunologic response. The ratio of clinical to subclinical attacks varies with the strain of virus concerned. A subclinical infection by a virus of low virulence will in general protect against subsequent symptomatic infection by a more virulent strain. Poliomyelitis spreads through the whole populated area by transfer from one human being to another, especially in childhood. Murray Valley encephalitis is transferred possibly in more than one step by mosquitoes, the infection being maintained in a reservoir of wild birds. The affected region is determined by conditions that affect the number and activity of susceptible birds and the mosquito species capable of carrying the virus. There is no known prevention of spread of the poliomyelitis virus in the community, and prevention apparently depends on development of an effective immunizing agent. Present indications are that it will be necessary to use a living attenuated virus given by the alimentary route in infancy. The significance of Murray Valley encephalitis as a public health problem in Australia has not yet been adequately assessed. Until investigations are more advanced, it is not possible to say whether it will be practicable to use antimosquito measures for control of future outbreaks.

Minerva Medica, Turin

43:141-160 (Jan. 26) 1952

*Clinical and Experimental Studies on Use of Penicillin Combined with Cobalt. A. Liguori.—p. 129.
Coronary Embolism Following Subacute Bacterial Endocarditis. M. Ravera.—p. 152.

Studies on Penicillin Combined with Cobalt.—One injection of a cobalt-penicillin preparation ("cobasol"), containing 250,000 to 300,000 units of penicillin in 5 cc. of cobalt, with an additional dose of cobalt six hours later was given daily to 14 patients with acute or subacute purulent otitis media, to 3 with chronic purulent otitis media, to 7 with tonsillitis, and to 3 with peritonsillitis. Some patients received 200,000 units of penicillin in 5 cc. of cobalt twice daily. Previous treatment with long-acting penicillin in aqueous solution had failed in all these patients. No local treatment was given to the patients with otitis, in 13 of whom the discharge from the ear began to decrease on the second day and ceased after four days. Temperature returned to normal and headache disappeared in patients with tonsillitis after two days. One of these recovered only after penicillin was injected into the tonsil. One patient with peritonsillitis was cured, whereas the other two had to be operated on. One patient in whom small bronchopneumonic areas had appeared bilaterally after laryngectomy was given 200,000 units of penicillin in cobalt twice a day. After three days the temperature was normal and the postoperative course proceeded normally, although the physical findings of the chest remained unchanged. The influence of cobalt on the phagocytic activity of the leukocytes in the presence of Staphylococcus aureus was studied in 15 persons. Three hours after parenteral injection of 300,000 units of penicillin in an isotonic sodium chloride solution the phagocytic index had increased slightly, whereas three hours after injection of 300,000 units of penicillin in 3 cc. of cobalt the increase in phagocytosis and number of leukocytes was much more pronounced. It is suggested that the ions of cobalt act as catalyzers and stimulate the tissues, especially those of the hemopoietic system. Since this treatment was effective in patients in whom previous penicillin therapy had failed, cobalt seems to have enhanced the antibiotic activity of the drug so that smaller amounts of penicillin were sufficient, and the side-effects caused by excess dosage avoided.

Münchener medizinische Wochenschrift, Munich

94:337-384 (Feb. 22) 1952. **Partial Index**

*Urobilinogenuria in Hepatocellular Jaundice Following Use of Antibiotics for Intestinal Sterilization. T. Baumgärtel and D. Zahn.—p. 337.
*Vitamin Deficiency Induced by Stress or Following Administration of Corticotropin (ACTH) and Cortisone. H. Schroeder.—p. 339.
Paradoxical Adrenal Insufficiency in Infants. D. Thomas.—p. 341.
Fatal Cerebral Purpura in Case of Congenital Syphilis Treated with Penicillin. W. Rotter and L. Wagner.—p. 345.
Antibacterial and Dietetic Treatment of Diarrheal Disorders in Infants. A. Wunderwald.—p. 347.

Urobilinogenuria in Jaundice and Intestinal Sterilization by Antibiotics.—In studies on the influence of various antibiotics on the intestinal flora Baumgärtel and Zahn found that with suitable dosage of an active antibiotic the intestinal flora could be destroyed to such an extent that even Ehrlich's aldehyde reaction of the feces would become negative because the pyrrole bodies produced by bacteria in the intestine are no longer present. This suggested an investigation of the connection between intestinal flora and formation of urobilinogen by antibiotic sterilization of the intestinal tract in cases of hepatocellular jaundice accompanied by urobilinogenuria; if urobilinogenuria could be demonstrated under these conditions, the urobilinogen could only be of extraintestinal origin, whereas the disappearance of a previously existing urobilinogenuria would prove the intestinal formation of urobilinogen. Although previous studies left no doubt that urobilinogen could only be of extraintestinal origin, Baumgärtel and Zahn wished to provide clinical proof. Because aureomycin, terramycin, and chloramphenicol (chloromycetin®) rapidly pass into blood, bile, and urine and may cause secondary effects, the authors used dihydrostreptomycin sulfate, the action of which is restricted to the intestinal canal. The histories of two of the patients in whom experimental studies were made are presented in detail. In one patient in whom jaundice was subsiding the urobilinogenuria could only be of extraintestinal origin. In the second patient epidemic jaundice was followed by hepatic cirrhosis. In this case chronic urobilinogenuria persisted despite antibiotic sterilization of the intestinal tract, whereas stercobilinogenuria disappeared. The authors mention the damaging effect of aureomycin on bacterial and cellular ferments, and suggest that aureomycin, possibly by its acidifying effect, renders the bilirubin-reducing ferment of the hepatic bile inactive and bilirubin is transformed into biliverdin. The authors feel that the fact that aureomycin rapidly enters blood, bile, and urine explains the observations of Watson and associates, who although they did not prove the intestinal origin of urobilinogen, corroborated unintentionally that the transformation of biliary bilirubin, by way of mesobilirubin, to urobilinogen is actually a fermentative process, because they used aureomycin, which destroys the ferment. Thus the extraintestinal fermentative origin of urobilinogen has been proved clinically, and the authors feel that this was to be expected in view of the intestinal production of stercobilinogen.

Vitamin C Deficiency Following Administration of Corticotropin and Cortisone.—In discussing causes of vitamin C deficiency, Schroeder mentions Selye's concept of the stress reaction, according to which physical and psychic traumas may stimulate a pituitary-adrenocortical mechanism, which in turn leads to the excretion of certain hormones, including corticotropin and cortisone. Excessive production of hormones is held responsible for the so-called adaptation diseases. The injection of these hormones produces a number of metabolic reactions, including reduction in the vitamin C content of the blood and disappearance of this vitamin from the adrenals. The reduction of the ascorbic acid content of the blood is one of the first manifestations of excessive production of adrenocortical hormones and therefore it has been used as a test in experimental studies. If ascorbic acid is injected intravenously, and either corticotropin or cortisone is injected at the same time, vitamin C disappears from the blood much more rapidly than ordinarily, whereas excretion of vitamin C in the urine is hardly altered. Similar results are obtained when adrenal tissue is incubated with vitamin C and cortisone or corticotropin, in that the vitamin C disappears more rapidly than in the absence of the hormones. The vitamin C content of the blood is also reduced following hemorrhages and physical exertions. The storage of vitamin C in the adrenals, which had been demonstrated years ago, is now understood as not merely accidental but purposeful, since the adrenals require this vitamin for important metabolic reactions. The author in 1933 observed therapeutic effects of vitamin C on Addison's disease (adrenal insufficiency). He mentions also the favorable effects of vitamin C in burns, in postoperative shock, in roentgen intoxication, and in increasing resistance to heat and cold. According to Selye, all these traumas represent nonspecific stimuli that activate the anterior-pituitary-adrenocortical mechanism. The relationship between the vitamin C metabolism and stress shows that a vitamin deficiency may impair the function of a certain organ in the absence of specific deficiency symptoms, that is, there are differences in the susceptibility of certain organs or systems of organs to vitamin deficiency. A diet high in vitamin C content or the administration of ascorbic acid is advisable in all conditions that may produce vitamin C deficiency in the adrenals, and when cortisone or corticotropin is administered, vitamin C should be administered simultaneously.

Nordisk Medicin, Stockholm

47:141-172 (Feb. 1) 1952. Partial Index

Frozen Shoulder. I. Alvik.—p. 150.
Determination of Adenosine Triphosphoric Acid (ATP) in Blood in Rheumatoid Arthritis. O. Lövgren and F. Luksep.—p. 153.
Allergic Reaction to *p*-Aminosalicylic Acid. T. Christiansen.—p. 154.
*Fatal *p*-Aminosalicylic Acid Intoxication. J. Muri.—p. 155.
Complicated Case of Splenic Depression of Bone Marrow (Due to Chloromycetin?). B. Mølgaard and E. Dollerup.—p. 157.
Is Sublingual Administration of Heparin Effective? I. Refn and F. Raaschou.—p. 159.
Tracheopathia Osteoplastica. V. Rønnov-Jessen.—p. 159.

Fatal *p*-Aminosalicylic Acid Intoxication.—In this case of fatal toxic reaction to *p*-aminosalicylic acid with fever, exanthem, agranulocytosis, and acute yellow atrophy of the liver, fever was the first sign that all was not well. Muri says that the triad of fever, scarlatiniform exanthem, and jaundice during treatment with *p*-aminosalicylic acid has been reported several times, but agranulocytosis has not been previously described. It is known that this agent can inhibit granulopoiesis and cause leukopenia and granulopenia. Tightening of the indications for treatment with *p*-aminosalicylic acid is advocated. The drug should be discontinued at once if there is an elevation of temperature that might be due to the drug or a drug rash. If the treatment is to be resumed, it must be carried out with care, possibly after desensitization or with administration of antihistaminic agents. *p*-Aminosalicylic acid is contraindicated in patients with impaired renal function unless the electrolyte balance can be controlled.

Philippine Medical Association Journal, Manila

28:1-60 (Jan.) 1952

Histologic Studies on Primary Lesions of Leprosy in Children of Leprous Parents, Other Related Studies, Including One Case with Necropsy. J. O. Nolasco.—p. 1.
*How Young Should Children with Harelip and Children with Cleft Palate be Operated upon? J. Laico.—p. 20.
Corneal Transplantation: Basic Concepts and Current Practices. G. de Ocampo.—p. 23.
Radiological Management of Chorio-Epithelioma: Report of Two Cases (One with Pulmonary Metastasis) with 10 Years Follow-Up. P. S. Chikiamco.—p. 32.

Age of Children at Operation for Harelip and Cleft Palate.—Operations for both cleft lip and palate should always be completed before the child reaches the age of two years. Children with both harelip and cleft palate should be operated on in two stages. In such children Laico repairs the harelip first, when the child is about two months old, and the cleft palate when the child is 18 months old. In cases of harelip without cleft palate, whether unilateral or bilateral, the operation is best performed as early as the age of five months. Operations for cleft palate alone should be done as early as 18 months. In cases of bilateral harelip with cleft palate, the author operates on the harelip first on one side at the age of 2 months. When the child is strong enough, he repairs the other side of the upper lip. Then when the child is 18 months old, he operates on the cleft palate.

Presse Médicale, Paris

60:173-192 (Feb. 9) 1952

Diseases of Collagen System (Collagenoses). L. M. Pautrier.—p. 173.
Experimental Tuberculosis Produced with Filtrated Cultures and Tuberculous Materials. A. Dufourt.—p. 174.
*Ligation of Hepatic Artery in Cirrhosis of Liver. L. Leger, G. Albot, J. Oudot and J. Zerolo.—p. 176.

Ligation of Hepatic Artery in Cirrhosis of Liver.—In the course of studies on the surgical treatment of portal hypertension, Leger and associates became greatly interested in the ligation of the hepatic artery as suggested by Rienhoff of Baltimore, because they felt that this intervention would be more easily carried out and tolerated better than the anastomoses of the portal and caval systems. To the cases previously reported by Rienhoff and others, they add their five cases. Since they first performed ligation of the hepatic artery 10 months ago, they are unable to assess long-term results of this operation. They gained the impression that ligation of the hepatic artery does not produce a notable reduction in the portal pressure, but they feel a considerable number of patients benefit from the operation clinically. It appears justified to perform further operations of this type and report the results. The authors plan careful follow-up studies with hepatic tests, and if possible, biopsy puncture.

60:193-212 (Feb. 13) 1952. Partial Index

Acute Miliary Tuberculosis and Purpura. A. Ravina, R. Claisse, B. Weil and D. Durnerin.—p. 193.
*Functional Biliary Dystonia; Role of Right Vagus (Pneumogastric) Nerve; Experimental Study and Surgical Deductions. F. Poilleux, Goidin and Nicolaïdis.—p. 196.
Suprarenal Anuria. P. Boulet, H. Serre, J. Mirouze and C. Bechard.—p. 200.

Functional Biliary Dystonia: Role of the Right Vagus Nerve.—Although biliary dystonias have been known for a long time, their clinical manifestations have not been determined exactly, largely because functional disturbances predominate. Poilleux and associates try to counteract some of these disturbances by "functional" surgery, and in this report they describe chiefly their preliminary experimental studies on 60 dogs. The first important conclusion arrived at after intervention on the right and left vagus nerves was that only the right abdominal vagus nerve is the motor nerve of the gallbladder and of the biliary passages in general. The vagus nerve on the left side has no effect whatever on the motility of the biliary passages; it is essentially a gastric nerve. With this in mind, it seemed interesting to resume inquiry into Dragstedt's vagotomy for gastric ulcer syndromes, and by resecting only the left vagus nerve it could be proved that it is the only motor nerve that influences the stomach. Studies on the cervical pneumogastric (vagus) nerves revealed that sectioning of the right and then of the left cervical pneumogastric nerves had only a negligible effect on the motility of the biliary passages. The interesting experiments of Guillet on the splanchnic nerves were repeated by the authors, and they agree with him on the importance of the right splanchnic as an inhibitor of the motility of the gallbladder. Sectioning of the right splanchnic increases the tonus of the gallbladder only very slowly. The second part of this experimental study is concerned with pharmacodynamic studies on drugs influencing the sympathetic system and their effects on the biliary system, including the tonus of the sphincter of Oddi, the contractions of the gallbladder, and the caliber of the choledochus. The drugs included parasympathomimetic (neostigmine [prostigmine®]), parasympatholytic (atropine), sympathomimetic (epinephrine) and sympatholytic drugs. These should aid in the diagnosis of biliary dyskinesia. The authors suggest that block of the vagus nerve ought to suffice in the treatment of these dyskinesias, and they have employed alcohol injection of the right vagus in some patients with biliary hypertonia.

Riforma Medica, Naples

66:85-112 (Jan. 26) 1952

*Capillary Fragility in Patients with Hypertension: Clinical and Experimental Study in Essential, Arteriosclerotic, Renal, and Diabetic Hypertension. P. Bini.—p. 92.
*Surgical Treatment of Mitral Stenosis. G. Manzi and M. Alonzo.—p. 94.

Capillary Fragility Tests in Hypertension.—Results are reported of a study made on 17 patients with essential hypertension, 17 with arteriosclerotic hypertension, 8 with renal hypertension, and 3 with diabetic hypertension. Bleeding and coagulation times were normal in almost all these patients. The prothrombin level (Quick's method) was below 100 in six patients with essential hypertension, normal in those with arteriosclerotic hypertension, diminished in those with renal hypertension, and was not estimated in those with diabetic hypertension. The capillary fragility test, according to the Frugoni-Giugni method with application of a constricting band, was positive in 16 patients with essential hypertension (94.1%), in 10 with arteriosclerotic hypertension (52.9%), and in 3 with renal hypertension (37.4%). The author, explaining these results, suggests that although hypertension was common to all these patients, its determining cause was different in each group, and capillary fragility is due not only to functional and anatomic condition of the capillaries but also to the particular biochemical condition of the vascular tissues. He made additional studies in another group of patients with various types of hypertension. The capillary fragility test was taken in each person with the Frugoni-Giugni method and also with the petechiometer. Results were contradictory in that the number of patients with essential hypertension in whom the Frugoni-Giugni method gave positive reaction (94.1%) decreased when the petechiometer was employed (68.4%). On the contrary, the first method gave positive reaction in 50% to 52.9% of patients with arteriosclerotic hypertension, whereas with the petechiometer the reaction was positive in 87.5% of them. Thus, because different stimuli are applied, results of capillary fragility tests are influenced by the various methods employed. In this group of patients a correlation between the positivity of the test and the degree of hypertension was always present when the Frugoni-Giugni method was used. This was not true when the test was made with the petechiometer.

Surgical Treatment of Mitral Stenosis.—Mitral stenosis may be treated by direct interventions on the mitral valve or by indirect interventions aimed at relieving the associated pulmonary hypertension. A rather successful indirect operation is anastomosis between the azygous and the pulmonary veins. This operation is indicated when the right side of the heart is normal, and when the pressure within the left auricle is greater than in the right, because only then can the blood, under increased pressure in the pulmonary vein, pass through the shunt into the right auricle. The purpose of this operation is a reduction of the pulmonary hypertension by shunting a part of the pulmonary blood directly into the systemic circulation, thus relieving the hypertension within the left auricle and avoiding pulmonary stasis with edema, hemoptysis, and auricular fibrillation. Ligation of the inferior vena cava below the point at which the renal veins join it is also performed to treat mitral stenosis and is indicated when this lesion is associated with cardiac insufficiency or insufficiency of the right ventricle with enlargement of the liver. These two indirect operations, although only palliative, give good functional results in that they provide sufficient release of pressure to relieve the congested pulmonary circulation. But some authors object that by unloading the pulmonary circulation the compensatory hypertension is eliminated, the output of the left ventricle diminished, and insufficiency of the systemic circulation may eventually occur. Of the direct operations on the mitral valve, valvulotomy is being avoided because pronounced regurgitation follows, especially if the incision is made in the anteromedial or aortic cusp of the valve. Valvulectomy or simple excision of the valve ring, and valvuloplasty or resection of a portion of the stenotic ring at the commissure are performed oftener. Commissurotomy is, however, the operation most frequently performed today in surgical treatment of mitral stenosis.

Rivista di Clinica Pediatrica, Florence

50:1-72 (Jan.) 1952. Partial Index

Latest Achievements in Pediatrics. C. Cocchi.—p. 1.
*Aureomycin as Adjuvant in Therapy of Malignant Diphtheria. A. Galeotti Flori and R. Rossi.—p. 21.
Syndromes of Banti's Disease In Infancy: Clinical Contribution and Considerations. R. Rossi.—p. 27.

Aureomycin in Malignant Diphtheria.—During the diphtheria epidemic from October, 1950, to March, 1951, the authors gave aureomycin as an adjuvant to serum therapy and streptomycin to nine children with malignant diphtheria. The total doses of streptomycin ranged from 1.60 to 7.5 gm. and the total doses of aureomycin from 1.5 to 3.75 gm. Adenitis and periadenitis were arrested after the first day of therapy, and the pseudomembranes began to detach earlier than usual. Seven children were cured, and two died after 12 and 24 days, respectively. Of 10 more children with malignant diphtheria who were treated during the same time with serum therapy and streptomycin alone (total doses of antibiotic of from 0.20 to 8 gm.) eight died. A synergistic action of the two drugs is suggested. Studies on guinea pigs that were injected with strains of Löffler bacillus isolated from malignant angina showed that aureomycin alone did not have a protective action against the diphtheric infection, whereas this action was present when aureomycin was combined with streptomycin. Since the clinical effects were better than the experimental, the authors suggest that better clinical results are obtained because in children streptomycin and aureomycin influence not only the Corynebacterium diphtheriae, as happens in guinea pigs, but also the associated bacilli that elaborate the Duran Reynals diffusive factor.

Ugeskrift for Laeger, Copenhagen

114:137-168 (Jan. 31) 1952. Partial Index

*ACTH and Cortisone Treatment of Diseases of Eye: Clinical Experiences. E. Vesterdal.—p. 137.
Spindle Cell Sarcoma of Tonsil. H. Christiansen, N. E. Manniche and P. Mench-Thygesen.—p. 152.
Two Deaths Following Treatment with Corticotropin. I. Krogh.—p. 154.

Corticotropin and Cortisone in Eye Diseases.—Since June, 1950, 111 patients with diseases of the eye have been treated with corticotropin (ACTH) or cortisone (52 with corticotropin exclusively, 33 with cortisone locally, 26 with a combination of the two agents, simultaneously or successively). Vesterdal finds that these substances produce better results than the treatment heretofore available for acute inflammatory diseases of the eye not directly of bacterial origin but due rather to allergic-hyperergic tissue reaction. Because of the effect of cortisone and corticotropin in inhibiting the exudative-inflammatory reaction and the connective tissue reaction, one must be on guard against masked direct bacterial infection and renewed bleeding of recent scars. Diseases in the anterior segment of the eye, including milder iritis, are best treated locally with cortisone. Deep scleritis, grave iritis and diseases in the posterior segment require general treatment with corticotropin, possibly combined with local treatment or after-treatment with cortisone. Since treatment with corticotropin and cortisone is not only symptomatic but also protects the vulnerable structures in the eye, these drugs should be used frequently, possibly in combination with specific treatment. No significant side-effects were seen after parenteral administration of corticotropin, but the patients should be carefully observed; cortisone administered locally caused no side-effects.

BOOK REVIEWS

Office Endocrinology. By Robert B. Greenblatt, B.A., M.D., C.M., Professor of Endocrinology, Medical College of Georgia, Augusta. With foreword by G. Lombard Kelly, M.D., President, Medical College of Georgia, Augusta. Fourth edition. Cloth. $10.50. Pp. 561, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1952.

This edition was prepared with the general practitioner in mind; hence, the subject matter is approached from a clinical rather than an experimental point of view. Several chapters have been deleted from the third edition; many have been changed considerably; and 20 new chapters have been added. The book is divided into five sections: general endocrinology, female endocrinology, hormonology, diagnostic procedures, and male endocrinology.

It is difficult to see why the author has entitled this book "Office Endocrinology," because there is little more to be added for a practical book on laboratory or hospital endocrinology. Furthermore, the author does not limit his material to endocrinology. Rubin tests, uterosalpingography, Huhner tests, trichomoniasis, and moniliasis are not a part of endocrinology, but they are included in the book.

The author does not believe that in functional or primary amenorrhea the gonadotropins can stimulate the subthreshold ovary to ovulation and corpus luteum formation. He is enthusiastic about the use of vaginal smears as an index of certain endocrine balances and as a guide to hormonal therapy. There is an excellent chapter on the vaginal smear with a discussion of technique, interpretation, and significance. There are also chapters on pregnancy tests and on the clinical application of vulvar fluorescence. In the chapters on estrogens, progesterone, and the androgens, there are lists of commercial products, and, at the end of each chapter, a short bibliography. The book is well written; it contains much useful information about the endocrines, and it is beautifully illustrated. The paper is sturdy; the type is clear; and the illustrations have been well reproduced. This edition should prove to be even more popular than the previous ones.

Auditory Training for the Deaf. By Mary Wood Whitehurst and Edna K. Monsees. Paper. $3.12. Pp. 99. Volta Bureau, 1537 35th St., N.W., Washington 7, D. C., 1952.

This book, essentially a manual for teachers, was written in order to provide a method and basic lesson material for auditory training of the deaf. The authors, both experienced in working with persons with hearing impairment, have adapted many of the lessons for home study and practice by the pupil aided by an assistant. In general, the lessons furnish material for listening experiences in sound contrasts, sounds in words, sentences and songs, and rhythmic patterns. It is felt that these experiences will enable the child with a residuum of hearing to recognize sounds and, thus, to improve his understanding of speech. Combined with lip reading, the training in recognition of sounds should enhance the information carried to the brain. The manual is in the tradition of Urbantschitsch's "Über Hörübungen bei Taubstummheit," which appeared in the 1890's in Vienna and Goldstein's "The Acoustic Method," which was published in 1939.

On the other hand, the material of Whitehurst and Monsees implies the use of improved hearing aids about which information was not previously available. Their manual, therefore, fills a need that should enable teachers to take advantage of modern instrumentation for auditory training. The book contains a brief but informative foreword on the principles of auditory training by Dr. William G. Hardy, director of the Hearing and Speech Center of the Johns Hopkins Medical Institutions. The professional affiliations of the authors are not given.

Psychosomatic Gynecology: Including Problems of Obstetrical Care. By William S. Kroger, M.D., Assistant Clinical Professor of Obstetrics and Gynecology, Chicago Medical School, Chicago, and S. Charles Freed, M.D. Cloth. $8. Pp. 503. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1951.

In this book, an attempt is made to consider the entire range of psychological problems confronting the female in the processes that relate to her adjustment or maladjustment to reproduction and sex. The book begins with a discussion of the Freudian concepts of psychosexual development. The chapter on the psychosomatic aspects of pregnancy has been done by Grantly Dick Read and is less critical than one might wish. This sets the tone for two subsequent chapters by the authors on the psychodynamics of pregnancy, parturition, and the postpartum period and on hypnosis and the psychological aspects of analgesia and anesthesia in labor. A large variety of pathological conditions in pregnancy are considered from a psychiatric point of view. Gynecologic problems are similarly considered. Homosexuality and nymphomania are given separate handling, and here the authors are on firm ground. The sections on the psychological aspects of retroversion of the uterus, birth trauma, leukorrhea, and pelvic tumors leave something to be desired. A reference list is given at the end of each section, and a useful glossary of terms is appended.

The authors have undertaken a difficult task. Psychiatry still lacks objective tools. The authors admit that adequate data are missing and that data that are available are often not too reliable. In this sense, the material is treated critically. For the most part, however, the authors fall into the habits of the psychiatrist, and the constant tone of *credo ut intellegam* wears thin. Some of the clinical examples given represent naive acceptance of uncritical data.

That this is not always the fault of the authors but rather represents the present state of knowledge in the field is clear. There is an enormous bibliography that will be useful to those who wish an easily available source of such information. In spite of the evangelical tone, the book serves a useful purpose in bringing forcefully to the clinician the fact that he must give more attention to the psychological aspects of the disturbances that he is called on to handle in the female. The subject matter in general and some of the approaches may irritate critical readers. In spite of this, the book contains data for which practitioners and teachers in the field have an urgent need. The book, attractively published, contains an index to its contents.

School Health and Health Education with Special Consideration of the Teacher's Part in the School Health Program. By C. E. Turner, A.M., Ed.M., D.Sc., Consultant in Health Education, World Health Organization, Arlington, Mass. With editorial assistance of *C. Morley Sellery*, M.D., Director of Health Services, Los Angeles City Schools, Los Angeles. Second edition. Cloth. $3.50. Pp. 472, with 11 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1952.

This is the second edition of a book that has been well accepted at the professional level for teaching school health and health education in teacher's colleges and providing supplementary reference to those actually engaged in teaching. In the preface, Dr. Turner states that "This book was prepared for teachers and school health personnel in training and in service. It seeks to present the educational aspects of the school health program and the personnel relationships involved. . . . The activities of physicians, nurses, dentists, dental hygienists, physical educators and others who contribute to the health program of the school are indicated in such a way as to show administrative relationships and educational opportunities without a discussion of the respective professional techniques . . . ."

This book would be of interest primarily to the educator and particularly the classroom teacher who must, at some time during the school year, include health in the subject matter that he is teaching. This book is also of considerable value to teachers who are expected to observe the physical patterns of children, so that they may refer those who are not normal to the family

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The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

physician through appropriate school health service channels. A great deal of information is included on the observations of the well child, the common departures from health, and the inclusion in health teaching of the attitudes and behavior that children should develop in relation to health services. This book would be of interest to physicians only if a considerable portion of their time were spent with children or they were actively engaged in school health activities. There has been little change since the first edition in 1947. The chapter titles remain the same, although, in several chapters, the information has been brought up-to-date by deletions and additions.

Der Einfluss des Nervensystems auf Bau und Tätigkeit der Geschlechtsorgane des Menschen. Von Prof. Dr. med. et phil. *H. Stieve.* Cloth. 36 marks. Pp. 191, with 93 illustrations. Georg Thieme, Diemershaldenstrasse 47, (14a) Stuttgart O; agents for U. S. A., Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1952.

From 1933 on, and especially during World War II, Dr. Stieve had an opportunity to study the corpses of many men and women. He was particularly interested in studying the effect of the nervous system on the gonads of both men and women. From 1941 to 1945, he made special studies of both men and women who died as a result of air raids and other serious disturbances.

The book takes up the following subjects: the effect of psychic disturbances on the testes, the influence of psychic stimulation on the ovaries and "silent" (stille) ovulation, a term the author coined to signify cases in which ovulation is followed by the appearance of a corpus luteum but in which the endometrium remains at rest, so that there is no evidence of definite secretory activity and no uterine bleeding. He also discusses bleeding associated with fright, paracyclic ovulation, weakness of oocytes in old women, the endometrium of elderly women, the effect of severe hunger on the ovaries, and the condition of the oocytes in the ovaries damaged by psychic stimulation.

From his intensive study, Dr. Stieve unequivocally maintains that, in higher animals, and especially human beings, both spermatogenesis and ovulation depend, to a large degree, on nervous influences. In men between 20 and 50 years of age, strong nervous stimulation can rapidly depress spermatogenesis or inhibit it completely. Ovulation can also be suppressed by nervous stimulation. The activity of the endometrium, which is under the dominance of the ovaries, also depends in a large measure on nervous influences. Strong emotion, such as fear, can lead to uterine bleeding in sensitive women. The book is well written and has many illustrations, most of which are photomicrographs. It contains a great deal of information about the effects of the nervous system on both the male and the female sex organs.

The New Way to Better Hearing through Hearing Reeducation. By Victor L. Browd, M.D., Adjunct Professor of Otolaryngology, New York Polyclinic School and Hospital, New York. *Introduction* by Robert West, Ph.D., *Head of Speech Clinic,* Brooklyn College, Brooklyn, New York. Cloth. $3. Pp. 226, with 16 illustrations. Crown Publishers, Inc., 419 Fourth Ave., New York 16, 1951.

In this book, the Browd system of hearing reeducation is discussed. According to the text, the methods of hearing reeducation include (1) "the freeing and converting of hidden hearing power" whereby "speech sounds are repeated by the patient and sounds other than speech are named or described; the interpretation of this sound is corroborated if it is correct or corrected if it is incorrect," (2) "the use of sounds of daily life," (3) "reeducation for difficult situations"; these reeducation procedures are employed in situations in which special difficulties are encountered, (4) "sounds other than speech," whereby an attempt is made to improve the hearing for sounds other than speech, and (5) "special reeducation for important sounds," wherein special procedures are designed to assist the person in differentiating speech sounds, bells, and other important sounds or signals that are regularly mistaken for one another. The text deals with an important problem in relation to the hard of hearing patient, namely, the rehabilitation phase that follows otologic, medical, and surgical treatment, including the fitting of hearing aids. This book is written in simple terms directed primarily to the layman with impaired hearing, the parents or relative of such a person, and teachers and speech therapists.

Investments for Professional People. By Robert U. Cooper, B.P.E., M.A., M.D. Cloth. $4. Pp. 342. The Macmillan Company, 60 Fifth Ave., New York 11, 1951.

Dr. Robert U. Cooper, a surgeon of Washington, D. C., and now a director of the Anacostia National Bank in Washington, believes that the investment or business education of professional persons has been sadly lacking. The highly technical and advanced courses of the professions have so crowded the curriculum necessary to certification that there has been little time to learn the actual "business" of making a living. As this book is intended to be elementary enough to interest the uninitiated, technical material is kept at a minimum. Every phase of investment available is defined, and elementary rules of selection are given. Since Dr. Cooper is primarily a physician, it is only natural that the book is aimed more at the medical profession than any other, but every attempt is made to make it applicable to all professional persons. Dr. Cooper wisely recommends seeing specialists in the field in which one is most interested and emphasizes that the development of an appropriate investment program is a highly individualized problem.

The discussion covers the topics of initial investment, income tax, insurance, in both the life and casualty groups, banking facilities, real estate, financial statements, bonds, preferred stock, common stocks, investment funds, investment opportunities, estates, and investment programs. Consideration is given to the effect of inflation and deflation as well as business cycles and trends. A bibliography for helpful reference is included at the end of the book. An interesting comment by Dr. Cooper on the value of an investment program follows. "From the purely mercenary standpoint of practical economy, the hours spent in developing a satisfactory investment program may be expected to yield more profitable results, per hour, than those spent in his regular professional activities." This book will have achieved its purpose if it makes the professional man more cognizant of the financial problems confronting him and encourages him to seek their most advantageous solution.

The Clinically Important Reflexes. By Dr. med. Friedrich Wilhelm Bronisch, Instructor, *University of Heidelberg, Heidelberg. First American edition revised by* Clemens E. Benda. Cloth. $4.75. Pp. 88, with 49 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1952.

This excellent little manual describes the important reflexes elicited in clinical practice. The author presents with a minimum of theory a fairly complete inventory of neurological reflexes and differentiates between instances in which reflexes may be normally increased or diminished and instances in which the presence of a certain reflex is pathological. Included are excellent drawings that illustrate the movement executed by the examiner in eliciting the reflex and the movement that comprises the subject's response. In addition, a discussion of the significance of each reflex movement is included.

Subjects considered include cranial nerve reflexes, upper extremity reflexes, lower extremity reflexes, superficial reflexes, muscle tone regulation, and autonomic reflexes. The manual also contains a short neurological bibliography and a complete index. Preceding the description of individual reflexes are some general remarks concerning the different types of reflexes and the reflex arc. The text is well written, terse, and authentic. It is a valuable addition to the armamentarium of the clinician.

Basic Biology of Man. By G. Kasten Tallmadge, Professor of History of Medicine, Marquette *University,* Milwaukee. Cloth. $3. Pp. 244, with 16 illustrations. *Random House, Inc.,* 457 Madison Ave., New York 22, 1952.

In this book, the basic biology of man is discussed in an interesting and factually correct manner. After describing the cells, the tissues of the body, and the basic structure and organization of the body, the author discusses in turn the locomotor apparatus and the digestive, circulatory, respiratory, urinary, and reproductive systems. A few simple diagrams illustrate the text, and the use of technical terms has been avoided whenever possible. This book can be recommended to the layman as a source of information relating to the anatomy and physiology of the human body.

The Zoology of Tapeworms. By Robert A. Wardle and James Archie McLeod. Cloth. $12.50. Pp. 780, with 419 illustrations. University of Minnesota Press, Minneapolis 14; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1952.

This is the most comprehensive study of tapeworms that has ever been published in a single volume. It represents the major research activities of Professor Wardle over a period of two decades, during which time he has become recognized as an outstanding investigator in the field. The book is divided into two parts; the first is concerned with the morphological, ecologic, and physiological characteristics of tapeworms as a group, and the second is devoted to a relatively exhaustive, systematic classification of this class of flatworms by orders, families, genera, and, in many instances, species. Although the subject is highly technical, the style is unusually lucid, so that the data are readily understood; much of the data in part 1 will be of interest to the comparative physiologist, and some of it, particularly that which concerns the host-parasite relations of tapeworms in man, will be of value to the physician in the diagnosis of human tapeworm infections.

The authors' point of view is modern and stimulating; many ideas are advanced to explain unsolved problems of tapeworm physiology and phylogeny. The authors support the hypothesis that the attachment end of the worm (so-called head) is actually its caudal extremity, a question on which parasitologists are divided in their opinion. Subgeneric names are frequently given generic rank; for example, the scientific name of the beef tapeworm is Taeniarhynchus saginatus rather than Taenia saginata, and the genus name for the relatives of the fish tapeworm that produce human sparganosis is Spirometra instead of Diphyllobothrium. On the other hand, the authors conclude that an error was made in 1910 when the fish tapeworm was placed in the genus Diphyllobothrium along with tapeworms that live in whales; accordingly, the correct name for fish tapeworm of man is not Diphyllobothrium latum but Dibothriocephalus latus. Similar changes have been made by Professors Wardle and McLeod in many other names that are not particularly of medical concern.

Throughout the volume there is a wealth of references to the literature and, at the end, there is a comprehensive bibliography. A large number of excellent line and stipple illustrations add to the ease with which technical morphological data may be understood. The University of Minnesota Press is to be congratulated on the excellent paper used, the clean-cut printing, and the typographical accuracy of this contribution. The volume is "dedicated as a tribute of admiration to Robert Ph. Dollfus," distinguished French zoologist and parasitologist, whose photograph is reproduced in the frontispiece. Although it is not always possible to agree with the authors' conclusions, the views advanced are without prejudice and are unusually stimulating. This volume should be available for frequent reference in every university and medical library.

Vademecum der klinischen Elektrokardiographie: Ein Leitfaden für Ärzte und Studierende unter besonderer Berücksichtigung der Brustwandableitungen und Differentialdiagnose der Störungen im Ekg. Von Dr. med. F.P.N. Schennetten, Dozent an der I. medizinischen Universitätsklinik und Poliklinik der Charité Berlin. Cloth. 10 marks. Pp. 109, with 85 illustrations. Georg Thieme, Thomaskirchhof 21, (10b) Leipzig C 1 (Russian Zone), 1951.

According to the preface, this booklet should familiarize the practitioner with current terminology used in clinical electrocardiography. Actually, it can be considered, at best, a survey of electrocardiography as practiced about 20 years ago. The presentation is mainly based on a description of abnormalities in the three Einthoven leads. Precordial leads are discussed superficially in a separate chapter that includes a few examples of alterations of leads CF2 and CF4. The illustrations are poor, half schematic drawings; actual electrocardiograms are reproduced only in a chapter on extracardiac artefacts, which occupies 20 pages. Diagrams explaining axis shift are confusing because of incorrect and arbitrary polarity indicated for the three limb leads.

This completely outdated compendium is sponsored by one of the most distinguished German internists. This shows that advances in clinical electrocardiography, so well presented in some other recent German publications, have apparently not yet found practical application in some leading German medical centers.

Personal and Social Adjustment: Foundations of Mental Health. By Wayland F. Vaughan, Professor of Psychology, Boston University, Boston. Cloth. $4.25. Pp. 578, with illustrations. Odyssey Press, Inc., 101 Fifth Ave., New York 3, 1952.

This volume was written essentially as a textbook of psychology and personality development for college students and for adult educational extension programs. It is divided into three sections covering basic principles of psychology and their application, dynamics of personal adjustment, and clinical methods for dealing with personality.

The material is elementary to the development of an adequate knowledge of mental hygiene and places greatest emphasis on the study of the so-called normal rather than the abnormal personality. Although consideration is given to the theories of most of the present day schools of psychology, the author emphasizes the Jungian theories, particularly as they relate to religious conviction and respect for theology. Several chapters on psychotherapy briefly cover the development of psychotherapeutic methods from mesmer and mesmerism through psychoanalysis to present day applications of group psychotherapy. The book is well illustrated, in many instances pointedly, with humorous cartoons republished from the daily press. It should provide easy and instructive reading for students and lay groups.

X-Ray Interpretation. By H. Cecil H. Bull, M.A., M.B., M.R.C.P. With chapter on Radiography of the Head, by James W. D. Bull, M.A., M.B., M.R.C.P., Assistant Radiologist, St. George's Hospital, London. Second edition. Cloth. $5.50. Pp. 406, with 287 illustrations by author. Oxford University Press, 114 Fifth Ave., New York 11; Amen House, Warwick Sq., London, E.C.4, 1951.

This is a simple but valuable and complete exposition of the scope and methods of roentgen interpretation. There is not a lithograph in the book, but the line drawings are well done. This book has been written for the clinician and the student, and, in its simplicity may not appeal to the experienced radiologist. It is easy to agree that the author has accomplished his purpose of providing a link between the radiologist's report and the case history type of integration of roentgen interpretation with the clinical picture of the case. It will serve as a splendid introduction for the medical student to the standard facts of radiology. This second edition has an enlarged and revised chapter on the skull and brain by Dr. J. W. D. Bull and a discussion of a remarkably simplified method of pelvic geometrics by Mr. J. W. Smith. A simple brim index is diagrammed with minimal calculations in contrast to the elaborate apparatus and measurements developed by American radiologists. The book is ideal for the clinician or country physician who has not the benefit of radiologic consultation.

Jewish Medicine. By Solomon R. Kagan, M.D. Cloth. $10. Pp. 575, with illustrations. Medico-Historical Press, 40 Harrison Ave., Boston, 1952.

In the preface, the author points out that the science of medicine is universal and is the product of collective effort. There is, therefore, no such thing as Jewish medicine in the strict sense of the word. Rather, the history of Jewish medicine is the history of Jewish culture. For history of medicine in any country is but a reflection of the intellectual life of this particular country or group of persons. It is from this point of view that the author regards his book. It is well known that during the medieval as well as the modern era the Jews have shown a predilection for the study and practice of medicine. Whether this predilection has much or anything to do with the humanitarian ideas of Israel is an interesting topic for thought. The modest purpose of this volume is to present the significant achievements of Jewish medical men and to evaluate their contributions. The chapters dealing with ancient Jewish medicine and medieval Jewish medicine are fascinating reading. The volume represents a vast amount of study and research. It is a welcome contribution to the important but much neglected subject of history of medicine.

QUERIES AND MINOR NOTES

PENICILLIN INJECTIONS

To the Editor:—*What is the least number of crystalline penicillin injections it is necessary to give daily to maintain therapeutic concentration of penicillin? To what amount are the doses increased, if one desires to give as few injections as possible and if procaine penicillin for aqueous injection, slowly absorbed penicillin preparations, and penicillin tablets are not available?*

M.D., Tel Aviv, Israel.

Answer.—It is generally believed that at least two injections a day of 300,000 to 600,000 units of crystalline penicillin G or K at 12 hour intervals must be used for the systemic treatment of infections that are susceptible to the antibacterial effects of this antibiotic. This system of dosage will give the desired therapeutic results in mild or moderately severe infections; however, it is obvious that if bacteremia or meningitis is present, or if, for any other reason, the infection is severe, a dosage schedule of parenteral injections at two or three hour intervals with adequate amounts of crystalline penicillin, 50,000 to 200,000, units, will be necessary.

MANAGEMENT OF INFERTILE COUPLE

To the Editor:—*A couple, who have been married for six years, complain of relative infertility. Six months ago examination of the wife revealed minor erosion of the cervix and slight hypoplasia of the uterus. The husband's sperm count was normal, but his basal metabolic rate was -15%. He was given 1 grain (0.06 gm.) of thyroid per day. The wife's cervical erosion was cauterized, and it healed well. Five Rubin tests indicated that the tubes were not patent. An iodized oil uterosalpingogram revealed bilateral patency. Two subsequent Rubin tests have revealed nonpatency again. Three Huhner tests have revealed nonmotile sperm within less than two hours after intercourse. The basal temperature curve indicates ovulation 14 days prior to menstruation, which occurs every 24 to 25 days and lasts 4 to 5 days. Please suggest further examinations or therapy.*

John W. Derbyshire, M.D., Sebastopol, Calif.

Answer.—The sharp difference in the findings between tubal patency with the Rubin test and with uterosalpingography must be resolved, if possible. Five consecutive negative Rubin tests indicate a high probability of tubal occlusion. Salpingography indicated bilateral patency, but this should not be accepted as evidence of the superiority of oil injections in opening up the tubal lumen. A single negative insufflation is never decisive, but it would certainly be unusual to get five negative tests if the tubes are really patent. Errors in technique and interpretation are frequent with both methods; these are discussed in a recent paper by White (*J. Obst. & Gynaec. Brit. Emp.* 58:573 [Aug.] 1951). One is justified in suspecting tubal impairment as an important factor in this case and making further studies, especially with tubal insufflations. The thyroid factor in the husband has been considered, although in treatment at least 1½ grains (0.095 gm.) of thyroid daily would seem advisable. The wife's basal metabolic rate should be determined and thyroid therapy given if a deficiency is revealed and also, perhaps, if the rate is normal, though in modest dosage in the latter case.

An endometrial biopsy just before or at the onset of menstruation would confirm the occurrence of ovulation and throw light on the reaction of the endometrium to the ovarian hormones. For example, if the progestational response is poor, supplementary premenstrual administration of progesterone may be helpful. If the biopsy is done premenstrually, which many prefer because better sections are obtained, the patient should be instructed to avoid coitus for two weeks preceding menstruation, to avoid the hazard of disturbing a possible early nidation.

TREATMENT OF UNDESCENDED TESTES

To the Editor:—*Strangulation and gangrene of one of the bilaterally undescended testes developed in a 6-month-old boy, necessitating removal. The remaining testicle is palpable in the inguinal canal. What management is advised?*

Arnold H. Becker, M.D., Bristol, Conn.

Answer.—It is important to make sure that the patient has a true undescended testis. He should be examined on two or three occasions to make sure that the testis cannot be displaced into the scrotum. If it remains above the scrotum at all times, treatment will have to be instituted. There is some question concerning the time at which corrective therapy should be started. It should not be delayed beyond the age of 3 years, and, probably, the earlier the testis is brought into the scrotum, the better. If the diagnosis of true cryptorchism is confirmed, the patient may be given chorionic gonadotropin in a dose of 250 I. U. three times a week by intramuscular injection. If descent is going to occur from glandular therapy, it will do so within about eight weeks. If it fails to do so within this length of time, the testis should be brought into the scrotum surgically, using great care to preserve its vascular and nerve supply.

STERILIZATION OF HYPODERMIC NEEDLES

To the Editor:—*What is the best type of sterilization for needles and syringes to be used in mass Mantoux testing? Is it safe to use a platinum needle, flaming the needle between injections? Would it be preferable to boil the needles and use a separate boiled needle for each patient?* *M.D., Minnesota.*

Answer.—The sterilization of needles used for Mantoux testing is no different than sterilization of needles used for drawing blood, administering hypodermic injections, or any parenteral administration by needle. Although the needle is not supposed to go beneath the epidermis, it nearly always does at some stage of the procedure. Today, when it is known that viruses particularly may be transferred by contaminated needles, it is necessary to take all precautions against this possibility. While adequate flaming of a platinum needle will kill any microorganisms present, there is no certainty that the operator will always put the whole needle in the flame or that, in case of a change in operators, the second one will do it adequately. There is the added disadvantage that a dried and charred residue is left on the needle. The best and safest method is, therefore, to change the needle after each test and to boil all needles for at least 15 minutes before using them on other patients.

COMBINED ADMINISTRATION OF PENICILLIN AND ASCORBIC ACID

To the Editor:—*Would it be satisfactory to combine in one syringe and give in one injection aqueous procaine penicillin and ascorbic acid, 500 mg. in 1 cc.?*

E. S. King, M.D., Shelby, N. C.

Answer.—There is probably no serious objection to giving medication in the manner you suggest; however, as either drug can be administered by more than one route, it is not apparent what advantage this method would have.

ULCER ON GREATER CURVATURE OF THE STOMACH

To the Editor:—*Is a gastric ulcer on the greater curvature of the stomach, demonstrable on roentgenograms, necessarily malignant? Are statistics available?*

Charles A. Joy, M.D., Parma, Ohio.

Answer.—A benign gastric ulcer on the greater curvature of the stomach is exceedingly rare, but some cases have been reported. A gastric ulcer on the greater curvature of the stomach, demonstrable on roentgenograms, is not necessarily malignant but is likely to be so.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

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TWENTY-FIVE YEARS' EXPERIENCE IN TREATMENT AND MANAGEMENT OF PERNICIOUS ANEMIA

William P. Murphy, M.D., Boston

The story of pernicious anemia as it has evolved during the past century is both interesting and dramatic. As the various signs and symptoms have been added chapter by chapter, it has been possible to recognize the part that each would play as the story develops. During the past 25 years another chapter has been added that is now almost completed. The demonstration of the effectiveness of whole mammalian liver for the control of pernicious anemia was followed by the development of crude, then highly refined, extracts of liver for simplification of treatment, and, finally, by the recognition and isolation of the, or one of the, essential elements of liver. The final chapter has not been written, but it is, I hope, well started, for it is now possible to prevent pernicious anemia if its development is anticipated and the proper preventive therapy is instituted.

Limitation of space makes it impossible for me to present the story as completely as it should be presented. The following brief outline will serve to emphasize the fact that this story has been possible because of the cooperation of men trained in various branches of science, working in many countries throughout the world. Slightly over 100 years have elapsed since Thomas Addison,[1] in an address before the South Medical Society of London, described a severe form of anemia associated with a diseased condition of the adrenal capsules; it was not, however, until 1855, in a paper entitled "On the Constitutional and Local Effects of Disease of the Supra-Renal Capsules," that his classic description of the disease now commonly known as pernicious anemia appeared in print.[2] Although several authors had previously described single instances of anemia of a similar type, it was probably Addison's paper that gave impetus to a more intensive interest in what was then a rare form of anemia. During the next few years, several papers containing case reports appeared both in England and on the continent, some of which included data not previously recorded. Barclay[3] described for the first time soreness of the tongue. Fenwick[4] described the characteristic atrophy of the stomach and its imperfect secretion, which he believed to be the cause of the anemia. This important observation was later stressed by Hunter.[5] Eichhorst[6] described the presence of both large and small erythrocytes in blood viewed through a microscope, and Biermer,[7] in 1872, discussed the anemia that he observed in 15 patients and to which he referred as progressive pernicious anemia.

While the outstanding signs and symptoms were recognized and assembled to form the characteristic picture of pernicious anemia, the search for a satisfactory treatment was not as productive. Iron, arsenic, rest at resorts, transfusion, and a high-protein diet were all tried, with only transient success. Irrespective of the treatment used, the patients all died within a few months or years. The anemia continued to be truly pernicious. Clinical research that demonstrated the value of liver and, subsequently, its extracts for the control of pernicious anemia was begun in the spring of 1925.[8] Diets high in protein had shown some promise. In experiments with dogs made anemic by bleeding, Whipple and his associates[9] observed a more rapid production of hemoglobin in dogs that had ingested liver than occurred in those that had not. There were other evidences that liver would enhance cell maturation. It seemed desirable, in view of these facts, to study under carefully controlled conditions the effect of the ingestion of large amounts of liver on the

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From the medical service of the Peter Bent Brigham Hospital.

Read before the First European Congress of Nobel Prize Winners, Lindau, Germany, June 12, 1951.

[1] Addison, T.: Disease of the Supra-Renal Capsules, London Med. Gaz. **43**: 517-518, 1849.

[2] Addison, T.: On the Constitutional and Local Effects of Disease of the Supra-Renal Capsules, London, Samuel Highley, 1855.

[3] Barclay, W.: Death from Anaemia, Med. Times **2**: 480 (May) 1851.

[4] Fenwick, S.: On Atrophy of the Stomach, Lancet **2**: 78 (July 16) 1870.

[5] Hunter, W.: An Investigation into the Pathology of Pernicious Anemia, Lancet **2**: 555 (Sept. 22), **2**: 608 (Sept. 29), and **2**: 654 (Oct. 6) 1888.

[6] Eichhorst, H.: Die progressive perniziöse Anämie, Leipzig, 1878.

[7] Biermer, A.: Form von progressiver, perniciöser Anämie mit Verfettungsvorgäugen in dem Circulationswegen, Correspondenzblatt f. Schweiz. Aerzte **2**: 15 (Jan. 15) 1872.

[8] Minot, G. R., and Murphy, W. P.: Treatment of Pernicious Anemia by a Special Diet, J. A. M. A. **87**: 470-476 (Aug. 14) 1926.

[9] Whipple, G. H., and Robscheit-Robbins, F. S.: Blood Regeneration in Severe Anemia: Favorable Influence of Liver, Heart and Skeletal Muscle in Diet, Am. J. Physiol. **72**: 408-418 (May) 1925.

anemia as well as on the other major manifestations of the disease in the patient with pernicious anemia. Since the various manifestations of the disease are well known, it is not necessary to describe them in detail; however, it may be helpful in following the later discussion to recall the three systems of the body that are involved:

1. *Blood-Forming Organs.* Anemia results from an arrest of maturation of the erythrocytes in the megaloblast stage due to the lack of a substance or substances present in the normal subject. The blood picture is that of macrocytic anemia, with a normal or increased cell content of hemoglobin. It is likely that in some instances the degree of anemia is enhanced during relapse by an increased rate of hemolysis of the erythrocytes.

2. *Gastrointestinal Tract.* The characteristic atrophy of the gastric mucosa that was mentioned previously is a congenital defect, probably present at birth, which results in abnormal gastric secretion. According to Castle's theory of the mechanism of normal blood formation,[10] a substance or substances contained in some foods (the extrinsic factor) react with normal gastric juice (the intrinsic factor) to form the anti-pernicious-anemia factor. Lacking either the extrinsic or intrinsic factor, pernicious anemia may develop. Atrophy of the papillae of the tongue, with soreness or burning, often referred to as glossitis, occurs frequently.

3. *Central Nervous System.* Destruction of nerve fibers in the posterior and lateral columns of the spinal cord, with replacement with glial tissue, occurs in many patients. This results in numbness, tingling or hyperesthesia of the extremities, and, finally, in difficulty of locomotion.

Successful treatment must eliminate the anemia, cure the glossitis, and control the difficulties resulting from central nervous system damage. The fundamental or congenital-defect of atrophy of the gastric mucosa and the resultant abnormal gastric secretion cannot be reversed; consequently, treatment cannot cure the disease but should control it, if carried out properly throughout the remainder of the patient's life.

DEVELOPMENT OF LIVER EXTRACTS

The plan of treatment as originally carried out[11] required that each patient ingest daily 200 gm. of mammalian liver. Liver broiled lightly was usually supplied, although a few patients preferred to drink it raw as a finely ground pulp. Many of the patients treated during the early days of this research were severely anemic and critically ill, and some were practically comatose, so that the problems involved in carrying out the regimen were often difficult to surmount; however, after a few days' treatment, these patients showed striking improvement in their general well-being, with increased strength and appetite. At this stage, evidence of improvement could be demonstrated in the laboratory; the reticulocytes or young erythrocytes climbed steadily to their peak of production by the sixth to the eighth day, indicating a rapid rate of maturation of the erythrocytes. The icteric index of the blood serum returned to normal as the increased rate of cell destruction was controlled, and the hemoglobin and erythrocyte levels increased to normal during a period of a few weeks. The dietary intake was designed to supply, in addition to liver, a generous quantity of green and yellow vegetables, milk and eggs, and a sufficient amount of carbohydrates and fats to make up an adequate caloric intake. Usually no meat protein was supplied other than that in the liver, and the fat intake was limited. Because of the critical condition of some patients at the beginning of treatment, only the liver was ingested during the first few days.

As one patient after another continued to show a characteristic response to the ingested liver, it became evident that liver contained one or more substances necessary for the maturation of erythrocytes within the bone marrow. A simple water extract of liver made by myself was successfully used as a substitute for whole liver, demonstrating that the effective material was water soluble. The problem of extracting the effective material from the liver was taken over by Dr. Edwin J. Cohn and his associates[12] at Harvard Medical School. They soon produced an extract commonly referred to as fraction G, which has since formed the basis for most of the extracts that have been prepared commercially. As a water soluble powder for peroral use this extract was found to be useful as a substitute for liver, thus, in some respects, simplifying the problems of treatment; however, its relatively greater expense and disagreeable odor and taste, plus the fact that about 40% of the effective material in liver was lost during its production, frequently resulting in inadequate dosage, limited its value as a completely satisfactory substitute.

As the process of refinement proceeded, extracts for parenteral administration were developed. In 1930, Cohn and his associates[13] reported the successful use of a refined extract administered intravenously. Aubertin and Voillemin,[14] Achard and Hamburger,[15] and Gänsslen[16] each reported in the same year satisfactory results from the intramuscular injection of extracts. Because of the greater danger of severe reactions following intravenous injection, the intramuscular route of administration was almost uniformly adopted. The early extracts were crude and retained a high content of inert but sometimes irritating solids. Concentration and refinement finally resulted in the development of an extract low in solids, relatively free from irritating substances, and so concentrated that 1 cc. contained the active material from 100 gm. of whole liver.[17] It was also determined that the anti-pernicious-anemia effect of this extract administered parenterally was 50 to 100 times greater than that of the liver from which it was prepared. These refined extracts have for many years continued to be the treatment of choice because of their many advantages. These include painless injection because of the absence of irritating substances; a high degree of efficiency in that small amounts given at rather long intervals are adequate and inexpensive; and the necessity for regular periods of observation by the physician, favoring the best clinical control.

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[11] Murphy, W. P., and Minot, G. R.: A Special Diet for Patients with Pernicious Anemia, Boston M. & S. J. **195**: 410-411 (Aug. 26) 1926.

[12] Cohn, E. J., and others: The Nature of the Material in Liver Effective in Pernicious Anemia 1, J. Biol. Chem. **74**: 69-71 (July) 1927. Cohn, E. J.; Minot, G. R.; Alles, G. A., and Salter, W. T.: The Nature of the Material in Liver Effective in Pernicious Anemia 2, ibid. **77**: 325-358 (May) 1928.

[13] Cohn, E. J.; McMeekin, T. L., and Minot, G. R.: The Nature of the Substance Effective in Liver, Tr. A. Am. Physicians **45**: 343, 1930.

[14] Aubertin, C., and Voillemin: Anémie pernicieuse traitée par des injections intramusculaires d'extrait hépatique, Bull. et mém. Soc. méd. d. hôp. de Paris **54**: 749-751 (May 19) 1930.

[15] Achard, C., and Hamburger, M.: L'opothérapie hépatique par voie parentérale dans le traitement des anémies graves, Presse méd. **38**: 1273-1274 (Sept. 20) 1930.

[16] Gänsslen, M.: Ein hochwirksamer, injizierbarer Leberextrakt, Klin. Wchnschr. **9**: 2099-2102 (Nov. 8) 1930.

[17] Murphy, W. P.: Anemia in Practice: Pernicious Anemia, Philadelphia, W. B. Saunders Company, 1939, p. 175.

Other tissues of the body are known to contain substances that have at least some anti-pernicious-anemia value. Kidney and muscle contain less than liver. Desiccated hog stomach for peroral use has about the same value as ingested liver extracts. The status of folic (pteroylglutamic) acid and vitamin B_{12} in the management of pernicious anemia will be discussed in detail later in this paper. Until the last few years, no method of testing anti-pernicious-anemia content was available, except that of its effect on the patient with pernicious anemia; consequently, each test of a fraction of liver or of a new substance required the availability of one or more patients. Testing for potency in the development of a satisfactory extract for either peroral or parenteral use was at times a difficult and tedious problem because of a dearth of patients. Such a test required enumeration of the reticulocytes daily for 14 days and of the erythrocytes usually twice weekly for a period of several weeks. These studies were important in two respects. By following the reticulocyte and erythrocyte response of a patient receiving a test substance it was possible to demonstrate the potency of the material used. On the other hand, a response to a substance of known high potency was sufficient to establish a diagnosis of pernicious anemia in a patient in whom the diagnosis had not been proved.

As more and more extracts, some of which were of low or questionable potency, became available commercially, it became evident that some degree of standardization should be undertaken. This problem was solved by requiring that certain standards of potency be established for inclusion in the United States Pharmacopoeia. Under the direction of a committee appointed to represent this publication, each extract was rated according to the number of units of anti-pernicious-anemia potency it contained per cubic centimeter. The unit was defined as that amount of substance that, when given daily to a patient in relapse, would produce a rise of the reticulocyte level to a peak according to standards prescribed by the committee and that also produced a satisfactory erythrocyte response during a period of 28 days. Although this procedure has not been entirely satisfactory, it has introduced a certain amount of uniformity in the characterization of commercial extracts. This has allowed the physician to prescribe or to administer these extracts with a degree of certainty as to the effect they would produce.

EFFECTIVENESS OF LIVER EXTRACTS

As previously mentioned, treatment in the first years consisted of daily ingestion of 200 gm. of cooked or raw whole liver during the period of relapse or when the erythrocyte level was low. As this level reached normal, about 5 million, it was possible to decrease the intake to perhaps 450 to 1,000 gm. of liver per week in order to maintain the patient in a satisfactory condition. Treatment by this means was highly satisfactory in most respects, but some patients experienced difficulty in ingesting the required amount; consequently, complete control of all phases of the disease was not always possible. Treatment by means of the peroral extracts, which were dissolved in some desirable fluid medium, usually water, was carried out in the same manner. These were also difficult for some patients to take and were relatively expensive, so that, at times, complete control was not attained. With the introduction of the more refined extracts for parenteral administration, resulting in greater accuracy of dosage, greater ease of administration with relatively less expense to the patient, and more regular observation by the physician, control of all the manifestations of the disease is limited only by the degree of cooperation of the patient.

Treatment during relapse with the parenteral extract has usually consisted of intramuscular injection on the first day or during the first week of an amount of extract that will supply from 30 to 60 U. S. P. units of anti-pernicious-anemia potency. Thereafter 15 units of potency is given weekly until the blood levels have reached normal. The patient is then maintained in a state of control by administration of 15 units as often as is found necessary. It must be borne in mind that the requirement for complete control varies greatly, and the best results of treatment can be attained only by satisfying each patient's individual requirement. Treatment by standardization of the dosage on the basis of the average requirement will result in failure in some instances to attain the highest standard of control possible.

Following intramuscular injection of a highly potent extract, the reticulocyte response may start as early as 24 hours later and reach its peak by the fifth day. The reticulocyte rise will depend largely on the quantity of potent material supplied and the level of the erythrocytes when treatment is started. The lower the erythrocyte level the greater will be the reticulocyte response. The erythrocyte level increases at a more or less regular rate to reach about 4 million by the 28th day, irrespective of the original level, so that the rate of increase is also greater the lower the initial level. With the increase in erythrocytes, the icteric index drops to normal and the leukocyte and platelet levels, often low during relapse, increase to normal. The hemoglobin level usually increases with that of the erythrocytes but may lag in some patients, owing to an insufficient supply of iron. This lag is readily corrected by the ingestion of therapeutic doses of iron.

Shortly after beginning treatment and usually by the time the reticulocyte peak is reached, there is likely to be a dramatic change in the patient's general well-being. He has an increased appetite, his strength is improved, his color begins to look pink instead of waxy, and his entire outlook changes. The glossitis, if present, disappears, and diarrhea, which is troublesome in a small percentage of patients, is controlled. If the diarrhea persists ingestion with meals of 20 to 40 drops of diluted hydrochloric acid in a glass of water may be effective. Disturbances caused by destruction of the nerves in the central nervous system are controlled and usually are strikingly improved. The degree of improvement, particmarrow returned to normal after treatment was stopped. Gill [6] reported two cases of agranulocytosis that cleared when chloramphenicol therapy was discontinued. Fatal cases of aplastic anemia were described by Rich and associates [7] and Loyd.[8] Rich's case was that of a 63-year-old man who received approximately 56.5 gm. of chloramphenicol in three months for a urinary infection; Loyd's case was that of a 28-year-old woman who had received chloramphenicol intermittently for one year before administration of 7.5 gm. in a five week period for urinary tract infection. In neither case was there an antecedent history of allergy or of ingestion of coal tar derivatives, nor was there any response to therapy. At autopsy petechiae and ecchymoses were found in all the organs, while the bone marrow was aplastic.

By reporting the third and fourth cases of fatal aplastic anemia associated with chloramphenicol therapy, we wish to reemphasize the serious consequences that may follow use of this agent. The need for such emphasis is well illustrated by the absence of any mention of chloramphenicol in a recent survey [9] of 107 drug fatalities reported in the literature since December, 1946.

SUMMARY AND CONCLUSIONS

Our patients were elderly but well-preserved persons who had no history of hay fever, asthma, or ingestion of other drugs containing a nitrobenzene radical. In case 1 the initial course of chloramphenicol was given in March, 1951, for four days; a subsequent course was prescribed in October and the ingestion of the medication was continued intermittently into November and December, 1951. Purpura appeared about two weeks later. In case 2 therapy was also begun in March, 1951. It was continued through April and terminated in May, 1951. Purpura did not appear until six weeks later. The onset of purpura in each instance was accompanied by granulocytopenia, leukopenia, thrombocytopenia, and anemia, which gradually increased in severity. Transient clinical improvement followed administration of corticotropin (ACTH) and cortisone, which did not reduce the need for whole blood or prevent fatal hemorrhages.

In our opinion careful evaluation should be made of the hematological status of candidates for chloramphenicol therapy, and the drug should not be prescribed when leukopenia or marrow hypoplasia are present. Patients receiving chloramphenicol should be followed with biweekly blood counts so that early signs of marrow injury may be discovered and the antibiotic discontinued while the capacity for effective hemopoietic regeneration exists. Although chronically ill, debilitated, or aged patients seem more susceptible to the toxic action of this agent, no common denominator has yet been found. If self-administration and careless supervision of the use of chloramphenicol can be eliminated, this valuable and relatively nontoxic drug will attain its rightful place in our armamentarium.

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[7] Rich, M. L.; Ritterhoff, R. J., and Hoffmann, R. J.: Fatal Case of Aplastic Anemia Following Chloramphenicol (Chloromycetin) Therapy, Ann. Int. Med. **33**: 1459 (Dec.) 1950.

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[9] Flaxman, N.: Drug Fatalities, J. A. M. A. **147**: 377 (Sept. 29) 1951.

FATAL APLASTIC ANEMIA FOLLOWING CHLOROMYCETIN (CHLOROMYCETIN®) ADMINISTRATION

R. K. Smiley, M.D., G. E. Cartwright, M.D.
and
M. M. Wintrobe, M.D., Salt Lake City

Reports of serious toxic effects following administration of chloramphenicol have been few. After the chemical structure of this antibiotic became established, the presence of a nitrobenzene radical caused some apprehension in regard to potential toxicity.[1] The early toxicity studies on animals [2] and man [3] led to the conclusion that chloramphenicol is of low toxicity. Later hematological observations on animals following administration of chloramphenicol by various routes were believed to reveal no deleterious effects that could be ascribed to the drug. Smith and co-workers [4] found that anemia developed following intramuscular administration of chloramphenicol to dogs in a dosage of 0.05 to 0.1 gm. per kilogram of body weight. No change occurred in the total or differential white blood cell count. Anemia did not follow oral administration. Gruhzit and associates,[5] using dogs, administered chloramphenicol by different routes for as long as four months in a dosage of 0.1 to 0.2 gm. per kilogram of body weight. Definite anemia did develop in the dogs receiving chloramphenicol intramuscularly, but this was ascribed to coincidental distemper infection and local reaction at the site of injection. The red blood cell count increased as the dogs improved, despite continued administration of the drug. No other hemopoietic changes were observed.

Much clinical experience in the use of chloramphenicol has been reported. In reviewing this experience, Smadel [6] reported no hemopoietic toxicity even following prolonged or intermittent treatment. No ill effects followed re-treatment of typhoid after discontinuation of chloramphenicol therapy.[7] He referred also to the ingestion by volunteers in hyperendemic typhus areas of 40 gm. of chloramphenicol over a two month period without signs of toxicity developing. In surgical infections, Altemeier and Culbertson observed no anemia or leukopenia.[8] Italian workers [9] have devoted considerable attention to the hemopoietic status of patients and normal subjects given chloramphenicol. No undesirable changes were

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Dr. Smiley is a Clinical Fellow of the American Cancer Society.

From the Department of Medicine, University of Utah College of Medicine, and the Salt Lake General Hospital.

[1] Crooks, H. M., Jr.: Chemistry of Chloromycetin, Bull. N. Y. Acad. Med. **25**: 794, 1949.

noted, although a variable neutropenia was reported by Bassi [10] in all patients treated with chloramphenicol.

The first suggestion of toxicity to the hemopoietic system is found in the report by Volini and associates.[11] These workers observed the rapid development of anemia and granulocytopenia in one patient and granulocytopenia in two others during the course of chloramphenicol therapy. Granulocytopenia was described in two children receiving chloramphenicol by Gill,[12] and is mentioned among other side-effects of the drug by Tomaszewski.[13] Rich and associates [14] were the first to report a case in which aplastic anemia was believed to have followed chloramphenicol administration.

Since the present paper was prepared, an additional report of development of aplastic anemia following administration of chloramphenicol has appeared.[15] The drug in this case was administered intermittently over a period of 13 months to a 28-year-old woman with a urinary tract infection. Six weeks after the last administration, petechiae developed, and death followed 10 days later. A complete autopsy report is included; this revealed findings compatible with the diagnosis of aplastic anemia. The cases reported here suggest a relationship between previous chloramphenicol ingestion and the development of aplastic anemia.

REPORT OF CASES

Case 1.—K. M., a 29-year-old white cattle rancher, was admitted to the Salt Lake General Hospital on Nov. 19, 1950. Four weeks prior to admission, petechial hemorrhages over the lower extremities were noted. Two weeks before admission persistent epistaxis occurred for two days. Because of easy bruising, slight sore throat, loss of strength, and elevation of temperature to 103 F, he was admitted to another hospital. Blood examination revealed pancytopenia, and, during the nine day period before admission to our hospital, he had received five blood transfusions, 1.1 gm. of cortisone, and penicillin.

Inquiry into the past history disclosed that the patient had been referred to a consultant in August, 1949, because of persistent urticaria and discomfort in the upper gastrointestinal tract of some years' duration. At this time the volume of packed red cells was 50 ml. per 100 ml. of blood, the white blood cell count was 5,400 per cubic millimeter, and the differential count was normal. Roentgenographic study of the gastrointestinal tract revealed a duodenal deformity. He was instructed to take chloramphenicol capsules, 0.25 gm. twice daily, for 14 days. Thereafter he was to take the same dose for the first six days of each month. Another blood examination in November, 1949, revealed no changes. This unusual regimen was continued until May, 1950. His blood in March, 1950, remained normal. The volume of packed red cells was 48, the white cell count 5,600, with 1% stab-forms, 41% polymorphonuclears, 5% eosinophils, 50% lymphocytes, and 3% monocytes.

Antacids were used irregularly during this period, and a brief course of autogenous vaccine was instituted between May and August, 1950. No other drugs were administered. In August, 1950, he was seen by the same consultant for a periodic reexamination. No blood examination was done. Between Sept. 1, 1950, and the middle of October, 1950, he resumed chloramphenicol ingestion and took 24 0.25 gm. capsules. Petechiae on the lower extremities appeared one week later.

Physical examination on admission revealed slight pallor with normal pulse, respiration rate, and temperature. There was clotted blood in the right nostril, and many petechiae were present over the legs and thighs. A few small lymph nodes were palpable in the cervical and axillary regions. The spleen could not be felt.

Laboratory data on admission were as follows: there were 4,070,000 red blood cells per cubic millimeter, and the hemoglobin level was 13.8 gm. per 100 cc. The volume of packed red cells was 36.5 ml. per 100 ml., the mean corpuscular volume was 90 cubic microns, and the mean corpuscular hemoglobin concentration was 38%. There were 0.1% reticulocytes. There were 3,350 white blood cells per cubic millimeter, of which 7% were juvenile cells, 26% polymorphonuclears, 52% lymphocytes, and 15% monocytes. The icterus index was less than 5. The thrombocyte count was 18,000 per cubic millimeter. The bleeding time was greater than 12 minutes, and 62% of the clot volume was extracorpuscular (normal is less than 30%). The coagulation time was 11 minutes and 30 seconds, and the tourniquet test was markedly positive. Urinalysis and chest roentgenograms revealed no abnormalities. Bone marrow was aspirated from the sternum and iliac crest, but these aspirations yielded material with few cells. From 60 to 80% of the cells were lymphocytes, and only 1 to 2% of the nucleated cells were of the red cell series (table 1). In the iliac crest aspiration on Nov. 20, 1950, the very few nucleated cells obtained were lymphocytes and occasional monocytes. Surgical biopsy of the sternum showed marrow spaces that contained mainly fat, with only a few nucleated cells and no megakaryocytes, that is, there was severe hypoplasia (see figure).

From the time of admission until Dec. 6, 1950, the patient was observed closely, and the previously described studies were performed. He was treated symptomatically, and three blood transfusions were given. On Dec. 6, signs of intracranial hemorrhage appeared. Administration of 100 mg. of corticotropin (ACTH) daily was started. There was no obvious improvement during 12 days of this therapy, but there was no progression of the signs that had suggested intracranial hemorrhage. Since the outlook was very poor, it was thought that even desperate measures might be tried. Because we had observed improvement following splenectomy in two cases of aplastic anemia,[16] it was decided that this operation might be justifiable in spite of the great risk. On Dec. 18, 1950, the procedure was carried out. The patient withstood the operation successfully, but, apart from postsplenectomy leukocytosis, no definite clinical or hematological improvement took place in the month of observation that followed splenectomy. The leukocyte count decreased to leukopenic levels by Jan. 25, 1951. A 10 day period of treatment with cortisone had no effect.

Table 1.—*Bone Marrow Observations in Case 1*

	Findings on Aspiration Biopsy		
Date	11-20-50	11-20-50	12-14-50
Site	Sternum	Ilium	Ilium
General comment	Few cells	Very few cells, mostly lymphocytes	Few cells
Blast forms	3.7%	.....	1.6%
Promyelocytes	.....	.....	0.3%
Myelocytes	0.6%	.....	0.3%
Metamyelocytes	2.0%	.....	4.3%
Polymorphonuclears	9.7%	.....	22.2%
Lymphocytes	82.3%	.....	63.3%
Monocytes	1.3%	.....	5.0%
Basophilic Normoblasts	0.3%	.....	1.0%
Polychromatophilic Normoblasts	.....	.....	.....
Orthochromatophilic Normoblasts	.....	.....	2.0%
Megakaryocytes	None seen	None seen	None seen

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2. Smadel, J. E., and Jackson, E. B.: Chloromycetin, an Antibiotic with Chemotherapeutic Activity in Experimental Rickettsial and Viral Infections, Science **106**: 418, 1947.

3. Ley, H. L., Jr.; Smadel, J. E., and Crocker, T. T.: Administration of Chloromycetin to Normal Human Subjects, Proc. Soc. Exper. Biol. & Med. **68**: 9, 1948.

4. Smith, R. M., and others: Chloromycetin: Biological Studies, J. Bact. **55**: 425, 1948.

5. Gruhzit, O. M.; Fisken, R. A.; Reutner, T. F., and Martino, E.: Chloramphenicol (Chloromycetin), an Antibiotic: Pharmacological and Pathological Studies in Animals, J. Clin. Investigation **28**: 943, 1949.

6. Smadel, J. E.: Chloramphenicol (Chloromycetin) in the Treatment of Infectious Diseases, Am. J. Med. **7**: 671, 1949; Clinical Use of the Antibiotic Chloramphenicol (Chloromycetin®), J. A. M. A. **142**: 315 (Feb. 4) 1950.

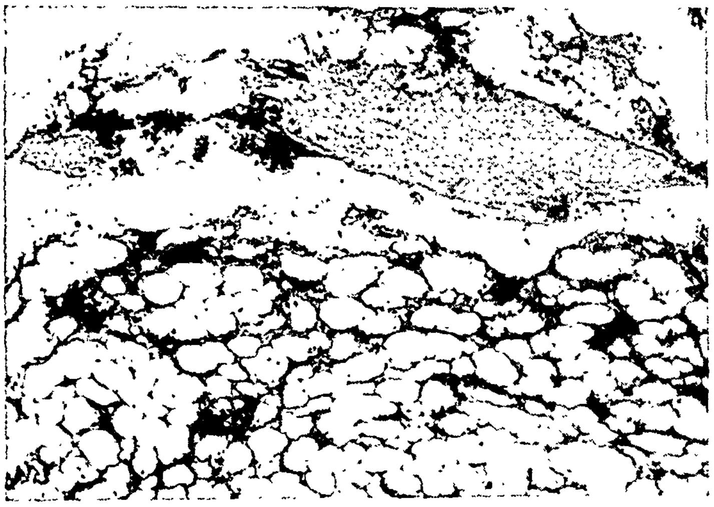
7. Hill, C. F. L.; Armstrong, J. V.; McDonald, C. K., and Allott, E. N.: Treatment of Typhoid Fever with Chloramphenicol, Lancet **2**: 802, 1950.

8. Altemeier, W. A., and Culbertson, W. R.: Chloramphenicol (Chloromycetin®) and Aureomycin in Surgical Infections, J. A. M. A. **145**: 449 (Feb. 17) 1951.

For prolonged periods after operation there had been elevation of the temperature to 102 or 103 F for no detectable reason. On Feb. 20, 1951, signs of rapidly progressive intracranial hemorrhage developed, and the patient died in coma the next day, four months after the onset of symptoms. Autopsy permission was refused. At no time was there any evidence of leukemia; the spleen removed at operation weighed 113 gm. and appeared grossly normal. Microscopic examination showed reticulum hyperplasia, a few foci of myelopoiesis, and moderately severe hemosiderosis.

CASE 2.—S. C., a 6-year-old girl, was admitted to the Salt Lake General Hospital on March 16, 1951. Since December, 1950, spontaneous bruising and severe recurrent epistaxes had occurred. Pancytopenia had been found elsewhere, and she had been treated with frequent transfusions during this period.

The past medical history revealed that in March, 1950, she had been given 16 chloramphenicol capsules (0.25 gm. in each capsule) over a period of one week for an upper respiratory tract infection. In October, 1950, she received seven more capsules of chloramphenicol, and in the ensuing days took one or two capsules sporadically for "the sniffles." In November, 1950, a portion of 16 prescribed chloramphenicol capsules (0.25 gm. in each capsule) were taken for similar reasons. The exact amount could not be determined. The only medications other than chloramphenicol she had received were vitamins and acetylsalicylic acid (aspirin). Urticaria had occurred at age 4 following administration of penicillin and sulfonamides, and some time later a "rash" appeared after use of the same drugs. The patient's mother gave a history of hay fever.


Specimen obtained by bone marrow biopsy in case 1.

Physical examination on admission revealed a pulse rate of 100 per minute, temperature of 99.8 F, blood pressure of 140/90 mm. Hg, and respiration rate of 20 per minute. The skin was tan-yellow in color and the tip of the nose was quite yellow, but the scleras were white. A history of ingestion of large amounts of carrot juice helped to explain the curious pigmentation. Scattered ecchymoses were present over the body, with a few petechiae on the buttocks and thighs. There was clotted blood in both nostrils and bleeding from the gums. No lymphadenopathy, splenomegaly, or bony tenderness could be found.

Laboratory data on admission were as follows: There were 3,760,000 red blood cells per cubic millimeter, and the hemoglobin level was 11.5 gm. per 100 cc. There were 3,650 white blood cells, with 92% lymphocytes, 5% polymorphonuclears, and 3% monocytes. There were 40,000 thrombocytes per cubic millimeter, and the icterus index was 15. The total serum bilirubin was 0.8 mg. per 100 cc., with 0.1 mg. of the "one minute" type. The bleeding time was 12 minutes, the coagulation time was 13 minutes 30 seconds (normal), and the tourniquet test was markedly positive. The clot showed no retraction in 28 hours. The urine was normal. Aspirated bone marrow was fatty and poorly cellular; 90% of the cells present were small lymphocytes. In an attempt to demonstrate circulating antibodies to chloramphenicol, serum from the patient was injected into the skin of a normal person. No reaction was observed when 10 μg of chloramphenicol were injected into the transfer site.

Cortisone was administered for a total of 37 days, in an initial dose of 100 mg. daily, and later 200 mg. daily. There was no clinical improvement, and the patient continued to require frequent transfusions. Epistaxes, subcutaneous hemorrhage, and hematuria occurred. The leukocyte count increased to 9,600 per cubic millimeter, but 98% of these cells were lymphocytes. Death resulted from uncontrolled gastrointestinal bleeding approximately five months after the onset of symptoms. Autopsy permission was not granted.

CASE 3.—M. J. C., an 8-year-old girl, was admitted to the Salt Lake General Hospital on Oct. 15, 1951. Since about Sept. 1, 1951, petechiae, ecchymoses, and epistaxes had occurred. Two weeks after the appearance of these hemorrhagic manifestations, she was seen by her family doctor because of an earache. Chloramphenicol was given every eight hours for one week. Subsequent blood examination revealed pancytopenia, and she was referred to our hospital for further study.

The past medical history revealed that in October, 1950, and in May, 1951, chloramphenicol had been administered for minor respiratory infections. The mother was told by the family physician at this time that the drug should not be given to the child without his direction. Thereafter, the mother recalled that one bottle of chloramphenicol capsules was used in the treatment of minor infections, but she was uncertain how much she took herself and how much had been given to the child. No other drugs are known to have been administered. The child had played among rose bushes dusted with an insecticide containing benzene hexachloride. Aplastic anemia has not been noted among the acute or chronic toxic effects of this substance.[17] Eczema was said to have been present in infancy.

Physical examination on admission revealed a temperature of 100.6 F, a pulse rate of 140 per minute, and a respiratory rate of 28 per minute. There were signs of healing otitis media in the right ear. Clotted blood was present in the left nostril, and a few fading ecchymoses were visible over the legs and buttocks. There were a few small shotty postauricular and posterior cervical lymph nodes. The spleen could not be palpated, and no other lymph nodes were felt. There was no bony tenderness.

Laboratory data on admission were as follows: There were 3 million red blood cells per cubic millimeter, and the hemoglobin level was 9.9 gm. per 100 cc. The volume of packed red cells was 26 ml. per 100 ml., the mean corpuscular volume was 87 cubic microns, and the mean corpuscular hemoglobin concentration was 38%. There were 1% reticulocytes. There were 3,650 white blood cells per cubic millimeter, with 1% juvenile forms, 12% polymorphonuclears, and 87% lymphocytes. There were 10,000 thrombocytes per cubic millimeter. The bleeding time was only 2 minutes 30 seconds, but was not rechecked. Of the clot volume 70% was extracorpuscular. The tourniquet test was only slightly positive. The icterus index was 5. Urinalysis and chest roentgenograms revealed no abnormalities. Sternal marrow aspiration revealed few cells with many lymphocytes; the remainder of the cells were mostly normoblasts (table 2).

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9. Binaghi, G.; Carcassi, U., and Pirastu, C.: Ricerche sul quadro ematologico centrale e periferico di soggetti normali e patologici trattati con alte dose di cloramfenicolo sintetico, Rassegna med. sarda. **1**: 563, 1950. Olivari, G., and de Filippi, P.: Il quadro ematico centrale e periferico nil tifo addominale in rapporto al trattamento con cloroamfenicolo, Hematologica **34**: 965, 1950.

10. Bassi, M., and Menci, S.: Effetti della terapia cloromicetinica sur decorso clinico e sul tasso leucocitario delle infezioni tifoidee, Gass. med. ital. **110**: 57, 1951.

11. Volini, I. F., and others: Hemopoietic Changes During Administration of Chloramphenicol (Chloromycetin), J. A. M. A. **142**: 1333 (April 29) 1950.

12. Gill, P. F.: Agranulocytopenia Following "Chloromycetin": Report on 2 Cases, M. J. Australia **1**: 768, 1950.

13. Tomaszewski, T.: Side-Effects of Chloramphenicol and Aureomycin, with Special Reference to Oral Lesions, Brit. Med. J. **1**: 388, 1951.

14. Rich, M. L.; Ritterhoff, R. J., and Hoffmann, R. J.: A Fatal Case of Aplastic Anemia Following Chloramphenicol (Chloromycetin) Therapy, Ann. Int. Med. **33**: 1459, 1950.

15. Loyd, E. L.: Aplastic Anemia Due to Chloramphenicol, Antibiotics and Chemotherapy **2**: 1, 1952.

16. Wintrobe, M. M.: Clinical Hematology, ed. 3, Philadelphia, Lea and Febiger, 1951.

17. Council on Pharmacy and Chemistry: Toxic Effects of Technical Benzene Hexachloride and Its Principal Isomers, J. A. M. A. **147**: 571 (Oct. 6) 1951.

For five weeks the patient was observed and was given transfusions as necessary. This period was marked by recurrent epistaxes and temperature elevations to 104 F, which would persist for four to seven hours. Red tender areas 3 to 4 cm. in diameter would develop on various parts of the body. These would lose their tenderness and pass through the color changes of an ecchymosis. The search for a site of infection led to repeated blood and urine cultures, chest roentgenograms, and examination by an ear, nose, and throat consultant. No infection could be found. The sternal marrow aspiration on Nov. 5, 1951, showed few cells, but there was some increase in the proportion of cells of the myeloid series.

At no time did the clinical or hematological examination suggest a diagnosis of leukemia. The total and differential leukocyte count changed little; one to three nucleated red blood cells per 100 white cells appeared in the peripheral blood during November. On Nov. 21, 1951, treatment with cortisone, 200 mg. daily, was started. After 10 days of this therapy, she was discharged with instructions to continue on the same dose. The episodes of temperature elevation continued to recur during the last week in the hospital. Five weeks after discharge the patient returned for examination. She had continued to require transfusions, and had had a few epistaxes as well as one episode of hematuria. The cortisone dosage had been reduced to 100 mg. daily on Dec. 27, 1951.

On examination the patient showed signs of well-pronounced hypercorticism. There was a red tender area on the right arm similar to those described before and one ecchymosis. The hemoglobin level was 10.7 gm. per 100 cc. There were 5,950 white blood cells per cubic millimeter, with 1% myelocytes, 2% juveniles, 48% polymorphonuclears, 48% lymphocytes, and 1% monocytes. There were 16,000 thrombocytes per cubic millimeter. Sternal marrow aspiration revealed a normal number of cells, with normal distribution except for a slight shift to the left in the myeloid series. The patient continued to receive cortisone, 100 mg. daily until Feb. 1, 1952, when the dose was reduced to 75 mg. Four weeks later the evidence of cortical stimulation was less striking and the anemia was severe (the hemoglobin level was 5.5 gm. per 100 cc.). Ecchymoses were marked, and the thrombocytopenia and leukopenia were as pronounced as before. Cortisone therapy was stopped on March 8, 1952. The patient became progressively more ill. An intracranial hemorrhage developed, and the patient died on April 2, 1952.

COMMENT

We have described two fatal cases of aplastic anemia associated with chloramphenicol therapy, as well as one case in which this association was somewhat less clear. This last patient may possibly have been exposed to other substances of toxic potentiality. The first two patients had received no drugs other than chloramphenicol, with the exception of vitamins, acetylsalicylic acid (aspirin), antacids, and an autogenous vaccine, none of which has ever been seriously suspected as a cause of aplastic anemia.

The diagnosis of aplastic anemia in these cases is based on (1) the absence of splenomegaly, significant lymphadenopathy, or bony tenderness in the presence of pancytopenia; and (2) bone marrow aspirations, which yielded material with few nucleated cells, most of which were lymphocytes. At no time did careful blood and bone marrow examinations reveal any evidence of leukemia. In the first case, the appearance of severe hypoplasia in a surgical biopsy of the sternum added confirmatory evidence to the diagnosis of aplastic anemia. The findings in the spleen removed at operation in the same case were compatible with aplastic anemia. In all three cases, other investigations (such as roentgenographic studies, blood cultures, and urinanalyses) failed to reveal evidence of any other disease process that might be associated with these hematological findings. Consequently, even though no autopsies were performed in our cases, we believe that the diagnosis of aplastic anemia was correct.

In our patients, as in the one reported by Rich and associates,[14] there was no more than circumstantial evidence to incriminate the antibiotic. This is true of most substances that have been regarded as occasionally causing aplastic anemia.[18] No clinical or laboratory features distinguished our cases from cases of aplastic anemia due to other causes or from the idiopathic type. The presence of fever to 103 F or 104 F for long periods in our patients without any detectable cause is a possible exception to this statement.

If administration of chloramphenicol did have a causal relationship to development of aplastic anemia in our cases, and since the drug has been used widely without evidence of toxic effects being noted, consideration of the circumstances under which our patients received the antibiotic is of interest. In all three cases there had been some allergic manifestation. In the first, there was a history of chronic urticaria. In the second, a history of urticaria and of a skin rash following administration of penicillin and sulfonamides was obtained. In the third case there was a history of infantile eczema. In the second case an attempt to demonstrate the transfer to a normal person of skin-sensitizing antibodies to chloramphenicol was not successful.

TABLE 2.—*Bone Marrow Observations in Case 3*

	Findings on Aspiration Biopsy		
Date	10-17-51	11-5-51	1-12-52
Site	Sternum	Illum	Ilium
General comment	Few cells	Few cells	Few cells
Reticulum cells	1.0%	0.3%	0.5%
Blast forms	0.5%	0.3%	.....
Promyelocytes	0.5%	2.6%	7.0%
Myelocytes	0.5%	4.6%	14.0%
Metamyelocytes	1.5%	6.3%	26.5%
Polymorphonuclears	0.5%	21.3%	14.5%
Lymphocytes	71.0%	45.3%	16.5%
Monocytes	.....	1.0%	1.5%
Plasmacytes	.....	.....	0.5%
Pronormoblasts	.....	0.3%	.....
Basophilic Normoblasts	1.0%	3.3%	.....
Polychromatophilic Normoblasts	16.0%	8.6%	14.0%
Orthochromatophilic Normoblasts	7.5%	5.6%	5.0%
Megakaryocytes	None seen	None seen	None seen

The unusual mode of administration of chloramphenicol to our patients is of interest. In the first two cases approximately 0.5 gm. daily was given for two weeks and one week, respectively. In the first case this was followed by administration of the drug for six day periods at monthly intervals for eight months. The last use of the drug preceding the development of the hemorrhagic manifestations followed four months later and consisted of administration of 0.25 gm. of chloramphenicol daily for approximately three weeks. In the second case a similar sequence of events occurred; approximately seven months after the initial therapy, sporadic doses of chloramphenicol were ingested. Finally, eight months after the initial therapy, some portion of 16 0.25 gm. capsules (a dosage which probably approximated the original therapy) was administered. Detailed analysis of the dosage and time relationship of drug ingestion to the onset of symptoms in the third patient was not possible.

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[18] Wintrobe, M. M.; Stowell, A., and Roll, R. M.: Report of a Case of Aplastic Anemia Following Gold Injections in Which Recovery Occurred, Am. J. Med. Sc. 197: 698, 1939.

We are not aware of the experimental administration of chloramphenicol in this manner. Re-treatment of typhoid with chloramphenicol apparently produced no undesirable effects,[7] but this was not carried out on a comparable scale, that is, by administration of repeated small doses at intervals over a period of 8 to 12 months as in our cases. In the previously reported case of aplastic anemia following chloramphenicol administration [14] the antibiotic was taken on four different occasions for 13, 20, 34, and 11 days during a three month period prior to the appearance of hemorrhagic manifestations. The intervals between therapy in this case were two and three days. The dosage of chloramphenicol during these prolonged periods of administration was 0.5 to 0.75 gm. daily, with the exception of the first four days of the original administration. In reported cases of aplastic anemia associated with anticonvulsant therapy,[19] streptomycin,[20] quinacrine (atabrine®),[21] and sulfathiazole [22] therapy, administration had usually been continuous prior to the development of symptoms. Because chronic exposure to benzol or therapy with gold and arsenicals is usually intermittent, it is not possible to draw any conclusions relating the role of administration of these substances to the subsequent development of aplastic anemia. It may be pointed out, however, that there is no relationship between the size of the dose of an organic arsenical [16] or gold [18] preparation and the appearance of aplastic anemia. Certainly this statement is true of chloramphenicol, since very much greater amounts have been prescribed on some occasions than were received by our patients.[23]

THERAPEUTIC IMPLICATIONS

Even if the circumstantial evidence incriminating chloramphenicol as a cause of aplastic anemia should be accepted, it must be admitted, from the paucity of reports, that this complication is rare. Since chloramphenicol has been shown to be a very valuable drug for the treatment of a number of infections,[6] in our opinion there should be no question of withholding the drug when its use is justified. However, the evidence suggesting occasional toxicity should interdict the indiscriminate employment of this antibiotic in the absence of clear indications, and patients should be warned against its use as a household remedy without medical direction.

SUMMARY

Reports of anemia, granulocytopenia, and aplastic anemia ascribed to chloramphenicol have been collected from the literature. Three cases of fatal aplastic anemia that followed prolonged intermittent therapy with chloramphenicol are described. It is suggested that a history of allergic manifestations and the mode of administration of the chloramphenicol may have been predisposing factors in producing bone marrow aplasia. Chloramphenicol usage should be limited to infections that in themselves, or by their complications, endanger the life of the patient, and in which this antibiotic has been shown to be efficacious.

175 E. 21st South St. (Dr. Wintrobe).

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20. Sacks, M. S.; Bradford, G. T., and Spurling, C. L.: Aplastic Anemia Complicating Streptomycin Treatment of Pulmonary Tuberculosis; Report of a Case, with Recovery, J. A. M. A. **147**: 308 (Sept. 22) 1951. Womack, C. R., and Reiner, C. B.: Fatal Aplastic Anemia Due to Streptomycin: Case Report and Brief Review of Pertinent Literature, Ann. Int. Med. **34**: 759, 1951.

21. Custer, R. P.: Aplastic Anemia in Soldiers Treated with Atabrine (Quinacrine), Am. J. Med. Sc. **212**: 211, 1946.

22. Meyer, L. M., and Perlmutter, M.: Aplastic Anemia Due to Sulfathiazole, J. A. M. A. **119**: 558 (June 13) 1942.

23. Carr, D. T.; Karlson, A. G., and Gainer, J. H.: Failure of Chloromycetin in the Treatment of Tuberculosis, Proc. Staff Meet., Mayo Clin. **25**: 316, 1950.

FATAL APLASTIC ANEMIA IN CHILDREN FOLLOWING CHLORAMPHENICOL (CHLOROMYCETIN®) THERAPY

REPORT OF FOUR CASES

Phillip Sturgeon, M.D., Los Angeles

The presence of the nitrobenzene radical in the structure of chloramphenicol (chloromycetin®)[1] led to the suspicion that the drug might be a hemopoietic toxin.[2] Clinical evidence tending to incriminate chloramphenicol as the responsible agent in instances of reversible leukopenia and/or anemia [3] and in one case of fatal aplastic anemia [4] has been reported. The purpose of this report is to add further evidence, obtained from the study of four cases of fatal aplastic anemia in children, indicating that chloramphenicol may be a serious toxin to the hemopoietic tissue of man.

METHODS AND MATERIAL

The diagnostic criteria employed,[5] including the method of bone marrow aspiration, preparation, and analysis, have been described previously in detail.[6] Hemoglobin levels, Wintrobe hematocrit determinations, and white and red blood cell counts were done by routine methods. The dry method was used in counting the reticulocytes, and Fonio's technique was employed for the platelet counts.

Four patients who were admitted to the Los Angeles Children's Hospital from Feb. 2, 1950,[7] to Dec 12, 1951, and who subsequently died of aplastic anemia are described. All patients gave histories of previous chloramphenicol therapy. Three other cases of aplastic anemia

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From the Department of Research, Los Angeles Children's Hospital, and the Department of Pediatrics, University of Southern California School of Medicine.

observed at the Children's Hospital during the past five years in which there was no history of chloramphenicol ingestion are discussed.[8]

CASE 1.—B. B. was first admitted at 22 months of age to Children's Hospital, Feb. 2, 1950. He had been well until six months previously, when he was admitted for one day to another hospital for treatment of diarrhea. At that time he was given 20 capsules of chloramphenicol. Pallor was noted four months later, at which time a blood count performed by the family physician revealed a hemoglobin level of 30%. A 300 ml. whole blood transfusion was administered, and 12 capsules of chloramphenicol were prescribed. During the following two months he had two attacks of severe tonsillitis that was treated with aureomycin on one occasion, and with a sulfonamide and penicillin on the other. The hemoglobin level following the transfusion was 68% but dropped to 36% in the succeeding two months.

A careful review of the patient's history relative to ingestion of drugs, obtained through the cooperation of the parents and the family physician, revealed the following: Several vitamin preparations and a boric acid (borofax®) skin ointment were used in early infancy. When the child was 9 months old, a cough medicine was prescribed, of which he took approximately 4 teaspoonfuls (16 cc.). This contained camphorated opium tincture (paregoric), 10 gm., sodium phenobarbital, 0.5 gm., and syrup of raspberry to make 120 cc. At 16 months of age the child had one injection of penicillin, a barium enema with x-ray studies of the bowel, and his first course of 20 capsules of chloramphenicol.

During the course of an upper respiratory infection, when the child was 20 months old, he took approximately 10 "cold pills" containing hyoscyamus, acetophenetidin, acetylsalicylic acid (aspirin), and gelsemium, and also three tablets containing phenobarbital and atropine sulfate. It was at that time that he also took 12 capsules of chloramphenicol, his second course. During his 21st month of life he received three capsules of aureomycin, a liver and iron preparation by mouth, two injections of a liver preparation, and one injection of vitamin B_{12}. There was no known exposure to organic solvents, dyes, or other recognized hemopoietic toxins.

Physical examination revealed a well-developed and well-nourished pale, irritable boy. The tonsils were enlarged. A loud blowing systolic murmur was audible over the left precordium. Abdominal examination revealed no abnormalities; the spleen was not palpable. There was no lymphadenopathy. Examination of the skin disclosed numerous petechiae scattered over the face, and old and new ecchymoses over the forehead. Results of the remainder of the examination were negative. Results of routine laboratory tests, including a tuberculin test, a Wassermann test and a urinalysis, were normal. Tables 1 and 2 summarize respectively the original blood and bone marrow findings obtained from the studies of this and the subsequent cases.

On his first admission to Children's Hospital the patient was given several whole blood transfusions, and then was discharged. Subsequently, over a 13 months' period, he was admitted to the hospital nine times, for transfusions and/or the treatment of tonsillitis. His general condition remained good; results of physical examination and laboratory tests, including bone marrow studies, were unchanged. Twenty-four hours following his last transfusion he suddenly died at home, with signs of a central nervous system hemorrhage. This fatal complication occurred 16 months after pallor, his first symptom of a blood dyscrasia, was noted.

CASE 2.—L. R. was first admitted to Children's Hospital Oct. 19, 1950, at 5½ years of age. Except for frequent attacks of tonsillitis, the child had been well all of her life until three months previously, when it was noted that she was bruising very easily. Two months before this and during the preceding year she had received courses of chloramphenicol for treatment of tonsillitis. One and one-half months prior to admission to this

TABLE 1.—*Summary of Hematological Findings*

Case No.	Date	RBC, Million/ Cu. Mm.	HGB, Gm./100 Ml.	Cell Volume, %	Reticulocytes, % of RBC	Platelets/ Cu. Mm.	WBC, Total/ Cu. Mm.	Differential		
								Granulocytes, %	Lymphocytes, %	Monocytes, %
1	2/ 2/50	1.88	6.1	17	0.6	9,000	2,500	23	62	15
2	10/19/50	1.47	4.4	15	...	.....	3,300	5	94	1
3	9/19/51	2.75	8.3	..	0.1	3,000	1,500	3	96	1
4	12/12/51	2.97	8.8	25	1.4	12,000	5,500	20	75	5

TABLE 2.—*Summary of Bone Marrow Findings*

		Case No.				Normal Values	
		1	2	3	4	Mean	Standard Deviation
Volumetric data	Fat, %	5.0	1.5	1.5	2.0	1.0	± 0.6
	Myeloid erythroid, %	0	0	0	1.5	4.0	± 1.5
Cytological data	Erythrocytes, %	11.0	2.2	1.0	50.2	21.4	± 8.5
	Granulocytes, %	21.4	3.6	1.0	22.8	51.5	±10.7
	[illegible]	58.4	90.3	96.2	19.8	20.5	± 6.2
	[illegible]	8.6	1.4	0.4	6.0	6.2	± 2.2
	[illegible]	0.4	2.5	1.4	1.0	0.4	± 0.3
	Tissue mast cells, %	0.2	0	0	0.2	0 *	......
	Blast cells, %	0	0	0	0	0 *	......
Histological data	Estimated cellularity, %	5	10	No particles recovered	40	45	35-80 †

* Have not been found in significant quantities in human bone marrow studied in this laboratory.
† Range.

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1. Rebstock, M. C.; Crooks, H. M., Jr.; Controulis, J., and Bartz, Q. R.: Chloramphenicol (Chloromycetin): IV. Chemical Studies, J. Am. Chem. Soc. 71:2458 (July) 1949. Controulis, J.; Rebstock, M. C., and Crooks, H. M., Jr.: Chloramphenicol (Chloromycetin): V. Synthesis, ibid. 71:2463 (July) 1949.
2. Smadel, J. E.: Chloramphenicol (Chloromycetin) in the Treatment of Infectious Diseases, Am. J. Med. 7:671 (Nov.) 1949.
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4. Rich, M. L.; Ritterhoff, R. J., and Hoffmann, R. J.: A Fatal Case of Aplastic Anemia Following Chloramphenicol (Chloromycetin) Therapy, Ann. Int. Med. 33:1459 (Dec.) 1950.
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6. Sturgeon, P.: Volumetric and Microscopic Pattern of Bone Marrow in Normal Infants and Children: I. Volumetric Pattern, Pediatrics 7:577 (April) 1951; Volumetric and Microscopic Pattern of Bone Marrow in Normal Infants and Children: II. Cytologic Pattern, ibid. 7:642 (May) 1951; Volumetric and Microscopic Pattern of Bone Marrow in Normal Infants and Children: III. Histologic Pattern, ibid. 7:774 (June) 1951.

hospital she was seen at another hospital, where a diagnosis[9] of aplastic anemia was made, and she was treated with blood transfusions, folic acid, and vitamin B_{12}.

A review of the drugs administered to this patient during the preceding year revealed that, in addition to the chloramphenicol, she had been treated with penicillin and sulfonamides. She had also played with a toy printing set containing an inked stamp pad, and her father had employed turpentine and gasoline to thin lead and zinc-based paints used for painting about the house.

Physical examination revealed a well-developed and well-nourished girl, with numerous large ecchymoses scattered over the face, trunk, and extremities. There was clotted blood in the nostrils, and oozing of blood and ecchymotic spots over the oral mucosa. A soft systolic murmur was heard over the left precordium. A few small lymph nodes were palpable in the groin and axillas; there was no hepatosplenomegaly.

Results of laboratory tests, including a urinalysis sedimentation rate, were within normal limits; the hemoglobin level was 5.5 gm. per 100 ml. of blood. Other blood findings and the bone marrow studies are recorded in tables 1 and 2. On confirmation of the diagnosis of aplastic anemia, the patient was given one blood transfusion and discharged from the hospital. Several weeks later she was admitted to another hospital, where she subsequently died.

Case 3.—A. E. was admitted to Children's Hospital Sept. 19, 1951, at 6½ years of age. A pinpoint red rash had appeared on the legs and spread to the face during the preceding week. Since early infancy the child's development had been noted to be slow, and at 9 months of age a diagnosis of mongolism was established. In addition to this difficulty the child had frequent upper respiratory infections and attacks of tonsillitis. A tonsillectomy was performed three months prior to the onset of his present illness. At that time the blood was "below normal levels."

A review of the drugs administered to this patient during the year preceding his current illness was obtained through the cooperation of the parents and the family physician. He had had five attacks of tonsillitis during the year; the first three were treated with penicillin and aureomycin. Chloramphenicol was included in the therapy of the last two attacks, which occurred six months and four months prior to the present illness. He had taken thyroid extract, one tablet daily; glutamic acid irregularly since two years of age; and "pituitary capsules," one daily for two months, four months prior to the present illness. No sulfonamide drugs, "headache remedies," or antihistaminic drugs were consumed during that period. An older brother used model airplane glues and "dopes"; there was no other exposure to organic solvents or dyes.

Physical examination revealed a 6-year-old child with obvious characteristics of mongolism; he was not acutely ill. A purpuric rash was densely scattered over the legs and sparsely scattered over the trunk and upper extremities. Several large ecchymoses were present on the legs. A minimal sanguinous postnasal drip was noted. A moderately loud systolic murmur was heard best in the third intercostal space at the left lateral sternal border. The liver and spleen were not palpable, and there was no lymphadenopathy.

Tables 1 and 2 record the results of the initial blood and bone marrow studies performed on this child. He was treated with numerous blood transfusions and penicillin but died on the eighth day of hospitalization of massive hemorrhage into the bowel.

Case 4.—J. E. was first seen at Children's Hospital at 6 years of age on Dec. 12, 1951, complaining of epistaxis for six weeks and bruising for four days. Seven months prior to this he had pneumonia, which was treated with chloramphenicol, 1.5 gm. per day for four days. During the succeeding four months' interval, increasing pallor was noted, and he had several respiratory infections. Six weeks prior to entry into this hospital he was given 2 teaspoonfuls (8 cc.) of terramycin for a minor respiratory infection. During this illness he also took an antihistaminic agent for one day and some more chloramphenicol. Because of the pallor, a blood count was performed which showed "anemia." Following this, the child took an iron preparation, vitamin K, vitamin C, and rutin. Other than a multivitamin preparation the child had taken routinely, no other drugs were used. The use of "headache remedies" and the exposure to organic solvents or dyes was denied.

Physical examination revealed a well-developed and well-nourished large boy with slight pallor. Except for several old ecchymoses about the legs, the physical examination revealed no abnormalities. There was no lymphadenopathy, and the liver and spleen were not palpable. Results of routine laboratory tests, including a urinalysis sedimentation rate, Kahn and tuberculin tests, were negative. The initial hemoglobin level was 5.6 gm. per 100 ml. of blood. The rest of the blood count and bone marrow findings are listed in tables 1 and 2.

A diagnosis of aplastic anemia was made, and the treatment of the anemia with small transfusions of blood, and of the recurrent unexplained fevers with penicillin and terramycin was undertaken. He died on Feb. 12, 1952, two months following the onset of his illness. Gross postmortem findings revealed generalized bleeding into the viscera, including the lungs, kidney, gastrointestinal tract, and brain.

In the following three cases aplastic anemia was not associated with known exposure to chloramphenicol.

Case 5.—J. D., a 13-year-old boy, was admitted to Children's Hospital Aug. 18, 1949, because of anemia. During the preceding year he had taken 25 to 50 mg., one to two times per day, of an antihistaminic drug (tripelennamine [pyribenzamine®] and/or prophenpyridamine [trimeton®]); an anterior pituitary extract (antuitrin®-growth), 500 units for 10 doses; and on two occasions, 0.5 grain (30 mg.) of thyroid extract daily for one month. The diagnosis of aplastic anemia was established; he died Sept. 16, 1949, of a cerebral hemorrhage.

Case 6.—L. J., an 8-year-old girl, was admitted to Children's Hospital Jan. 28, 1950, because of bruising for one month. She had taken a sulfadiazine preparation for the therapy of a common cold 10 months previously, and had received 450 r of x-ray therapy to an enlarged anterior auricular lymph node at the same time. Three months prior to the onset of her illness she had had one injection of penicillin for treatment of a respiratory infection.

During her first hospital visit an infection manifested only by elevation of temperature was treated intensively for six days with penicillin, streptomycin, sulfonamides, and chloramphenicol, 2 gm. per day for three days. Following this, the child was admitted frequently during the subsequent year for blood transfusions, and on one occasion 450,000 units of penicillin were given for an attack of tonsillitis. She also received two doses of antihistaminic drugs (diphenhydramine [benadryl®] and tripelennamine). After January, 1951, she required no further transfusions, and her blood values returned to normal. When last seen Nov. 27, 1951, 10 months following her last transfusion, which was 23 months after the onset of her illness, a physical examination revealed no abnormalities. The hemoglobin level was 16.4 gm. per 100 ml.; there were 6,500 white blood cells and 105,000 platelets per cubic millimeter of blood; and the differential count was normal.

Case 7.—J. R., a 6-year-old boy, died on his first admission to Children's Hospital Dec. 1, 1951. He had been followed since May, 1951, as a private outpatient for aplastic anemia, which had first manifested itself during January, 1951. He had been well all of his life, and during the preceding year had taken no antibiotic, sulfonamide, or antihistaminic drugs. There was no exposure to known hemopoietic toxins, but some volatile paint solvents had been employed by the mother and child to clean brushes used in oil and textile painting.

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[7] Chloramphenicol was first available commercially in small quantities in this community in January, 1949, and in larger quantities in April, 1949. The first patient encountered in this series received his initial doses of chloramphenicol in August, 1949; symptoms suggestive of a blood dyscrasia were noted in December, 1949.

[8] Cases 1, 2, 5, and 6 in this report correspond respectively to cases 2, 4, 1, and 3 in a previous report dealing with the diagnosis of aplastic anemia in children.[5]

[9] This diagnosis was established at that time by Dr. Gurth Carpenter. In a separate report by him dealing with aplastic anemias associated with chloramphenicol therapy, he will include her case with those of a group of adults.

COMMENT

Drugs other than chloramphenicol had been taken by all of the above patients. However, in the first four cases use of chloramphenicol was a common factor. The only other antibiotic used in four of the seven cases described was penicillin. It is of interest that in case 6 penicillin had been used during the course of the girl's disease to treat infections, and that she was the only child in this series to survive. It seems unlikely, therefore, that penicillin could be the responsible drug in this particular case.

In the first three cases, penicillin was also employed prior to the onset of aplastic anemia. From this standpoint alone, penicillin seems deserving of about three-fourths as much suspicion as chloramphenicol of being the etiological agent. Penicillin, however, has been used for a much longer time than chloramphenicol, yet modern text books of hematology do not list penicillin as a possible cause of aplastic anemia,[10] nor could any recent reports be found to this effect.

Antihistaminic agents [11] and streptomycin [12] have been incriminated as etiological agents in cases of aplastic anemia. None of the patients described in this series received streptomycin prior to the onset of his illness; however, one patient (case 5) received relatively large amounts of antihistaminic agents over a prolonged period. In view of similar cases reported elsewhere,[11b] it appears quite possible that his fatal illness was related to that class of drug.

In this series, therefore, it seems unreasonable to incriminate penicillin in any of the cases. In one case (case 5), tripelennamine can be logically suspected as the cause of the aplastic anemia. Thus, in two of the remaining six cases (cases 6 and 7) there is no obvious association of the aplastic anemia with drugs or antibiotics, but the original four have in common the history of chloramphenicol ingestion.

The widespread use of chloramphenicol is known. The possibility in this small number of cases is not remote, therefore, that it is pure coincidence that chloramphenicol was used prior to the onset of their aplastic anemias. There are, however, two additional pieces of evidence that should be considered before a decision is reached. In the first place, the chemical structure of chloramphenicol and its similarity to other known hemopoietic toxins is established [2]; secondly, others have reported instances of hemopoietic depression associated with administration of chloramphenicol. Rich [4] reported a fatal case of aplastic anemia in a patient during a prolonged course of therapy who three months earlier had received a sulfonamide preparation, penicillin, and aureomycin. However, subsequent to discontinuing these latter drugs, a blood count performed on the patient was found to be normal. It was only after three months of chloramphenicol therapy that an abnormality in the blood count appeared. Volini and associates [3a] have reported on three patients in whom reversible granulocytopenia developed during approximately two weeks of chloramphenicol therapy. To date there has been at least one other report associating chloramphenicol with toxic changes in the blood.[3b] The time of administration and the dose of the chloramphenicol in relation to the appearance of symptoms of a blood dyscrasia have been quite variable in the cases presented and in those cited from the literature. At first, this might seem to discount the possibility that chloramphenicol could be responsible for the hemopoietic changes. However, Wintrobe [10] mentions in his discussion of aplastic anemia secondary to benzole poisoning that the "evidence of poisoning may appear in a few weeks or only after many years of exposure, or it may not be discovered until the onset of infection long after exposure has ceased. Any degree of exposure is dangerous." Therefore, inasmuch as the exact mechanism of action of this class of drug is unknown, the variations in amount of drug to which these patients were exposed and in the time of administration to the onset of their symptoms does not preclude chloramphenicol as the etiological agent.

The therapeutic effectiveness of chloramphenicol in a wide variety of the infectious diseases was established shortly after its discovery. The chemical, physical, and antibiotic identity of the synthetic and natural product was also proved. However, at that time careful observations of a large number of patients treated with the antibiotic failed to show any significant changes in the red blood cells or the white blood cells attributable to therapy.[2] With regard to this failure to demonstrate clinical toxicity in large, well-controlled studies, the work of Kracke, published in 1933 on amidopyrine and other drugs that he classified in the benzamine series, is worthy of particular note. He brought out that the benzamine class of drugs (in which chloramphenicol can be placed by virtue of its nitrobenzene structure) was associated with an increasing incidence of granulocytopenia.[13] He also emphasized that it was necessary, inasmuch as only an occasional person who took this class of drug developed granulocytopenia, to presuppose the existence of a previously weakened, damaged, or idiosyncratic bone marrow that may be congenital or acquired. Today, in the case of chloramphenicol, the same situation may exist, and it appears reasonable to make the same supposition, that is, that thousands of people may take chloramphenicol indiscriminately and show no depression of the bone marrow, but in a very rare idiosyncratic person aplastic anemia may be expected to develop. It is therefore felt, despite the fact the evidence presented is only circumstantial, that the fatal cases of aplastic anemia described in this report are probably the result of human idiosyncrasy to chloramphenicol.

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10. Wintrobe, M. M.: Clinical Hematology, ed. 3, Philadelphia, Lea & Febiger, 1951.

11. Wintrobe.[10] (*a*) Drake, T. G.: Agranulocytosis During Therapy with the Antihistaminic Agent Methaphenilene (Diatrin), J. A. M. A. **142**: 477 (Feb. 18) 1950. (*b*) Blanton, W. B., and Owens, M. E. B., Jr.: Granulocytopenia Due Probably to "Pyribenzamine," ibid. **134**: 454 (May 31) 1947. Hilker, A. W.: Agranulocytosis from Tripelennamine (Pyribenzamine) Hydrochloride, ibid. **143**: 741 (June 24) 1950. (c) Martland, H. S., Jr., and Guck, J. K.: Agranulocytosis After Antihistaminic Therapy: Report of Case Following Prolonged Use of Tripelennamine (Pyribenzamine) Hydrochloride, ibid. **143**: 742 (June 24) 1950.

12. Womack, C. R., and Reiner, C. B.: Fatal Aplastic Anemia Due to Streptomycin: Case Report and Brief Review of Pertinent Literature, Ann. Int. Med. **34**: 759 (March) 1951.

13. Kracke, R. R., and Parker, F.: The Etiology of Granulopenia (Agranulocytosis), with Particular Reference to Drugs Containing Benzene Ring, J. Lab. & Clin. Med. **19**: 799 (May) 1934.

SUMMARY AND CONCLUSIONS

Four instances of fatal aplastic anemia are reported in children who had on previous occasions received relatively small doses of chloramphenicol (chloromycetin®) for minor illnesses. Three other cases of aplastic anemia (two fatal, one with recovery) were observed over a greater time interval; in these there was no history of chloramphenicol therapy. It is pointed out that serious reactions in the former cases appear to be due to a human idiosyncrasy to chloramphenicol. It appears advisable, therefore, before prescribing chloramphenicol, to weigh carefully the relatively remote possibility of these serious hazards against the possible therapeutic advantages of this drug over other antibiotics not suspected of producing fatal toxic reactions.

ADDENDUM

Since completion of this manuscript, two additional cases of fatal aplastic anemia following chloramphenicol therapy have been observed at Children's Hospital. Details of one of these cases will be reported by Dr. Gurth Carpenter, who originally established the diagnosis. It is of interest to note that of the six patients seen to date in this clinic, three were physicians' children.

4614 Sunset Blvd.

SURGICAL TREATMENT OF VARICOSE VEINS

William H. Prioleau, M.D., Charleston, S. C.

The treatment of varicose veins as commonly practiced consists of high ligation of the internal saphenous vein and some obliteration of its main trunk and dilated tributaries by stripping and the injection of sclerosing solutions, either singly or in combination. While this is generally productive of early good results and proves adequate in some cases, it is followed by a high incidence of persistence and recurrence of the varicosities and excessive venous thrombosis. This is accounted for by the fact that the extent of the operation is too limited and the method of obliteration is poorly controlled, not definitive, and accompanied by undue risk of complications.

These observations were made on patients whom I treated by high ligation and injection prior to 1946,[1] as well as those treated by others. As a result thereof, the injection of sclerosing solutions was discontinued and the resection of the veins has been gradually extended to include the subfascial trunk and larger tributaries of the internal saphenous system in the thigh and leg and the external saphenous system from the knee to the ankle as a more or less routine procedure, as well as subfascial ligation of incompetent perforators when indicated.

To be most effective, the treatment should be based on the conception that varicosity of the veins is a progressive degenerative disease, affecting primarily, and more or less generally, the walls and valves of the superficial veins of the lower extremity. The venostasis with its sequelae of dermatitis, ulcer, and phlebitis is due to dilatation of the superficial veins and incompetent communicating veins with resultant sluggish flow and increased hydrostatic pressure in the superficial venous system. Treatment should be directed to interrupting the main paths of communication between the deep and the superficial systems and obliteration of the diseased superficial veins.

On account of the frequent anatomic variations and the friability of the veins, owing to the disease process, the operative method most effective is excision under visual and palpable control. Stripping is a relatively blind procedure and at best effects a removal of the subfascial trunk of the internal saphenous in the thigh and leg. It is relatively ineffectual in anatomic variations such as duplications and is not applicable to subcutaneous tributaries, which in some cases are of greater importance than the subfascial trunks. The injection of sclerosing solutions has no place in the treatment of varicose veins except possibly in the obliteration of residual, small, unsightly varices. With injection therapy, there is the danger of severe systemic reaction of allergic nature. The extent of the thrombosis cannot be controlled, and there may follow a fulminating thrombophlebitis of alarming degree with accompanying arteriospasm, resulting in damage to or even loss of the limb. The obliteration of incompetent communicating veins cannot be safely and consistently effected, and veins at one time satisfactorily occluded may become recanalized. Of greatest importance, the injected solution commonly finds its way into the deep veins, as indicated by the distribution of radiopaque dye used in making venograms, and may cause thrombosis, with resultant permanent damage.

The extent of the operation presents more of a problem. The value of the tourniquet tests is generally overrated. They indicate mainly the sites and degrees of retrograde flow only for the brief period after the patient changes from a prone to an upright position and the patency of the deeper veins in connection with brief exercises. They fail to give evidence concerning the dilatation that occurs on long standing. Valuable information as to dilated veins and incompetent perforators can be obtained by examination of a patient after he has been standing still for 10 minutes or longer. The degree of venostasis, as indicated by distention of the veins and edema, can best be determined by examination of the patient toward the end of a day of normal activity. Increased pigmentation and subcutaneous fibrosis indicate a long-standing process. Valuable information as to the adequacy of the deep venous return may be obtained when a firm supportive bandage, from the metacarpal region to the knee, is worn for a week or longer; this indicates what can be expected from treatment of the varicose veins.

From the Department of Surgery of the Roper Hospital and the Medical College of the State of South Carolina.

[1] Prioleau, W. H.: Varicose Veins—Treatment by Excision Preferable to Treatment by Ligation and Injection, J. South Carolina M. A. 43:359-361 (Dec.) 1947.

No treatment is indicated in conditions of mild degree, as the rate of progression cannot be predicted and any treatment of prophylactic value would require an operation more extensive than warranted by the presenting condition. In the average case of well-developed varicose veins, the treatment should consist of high ligation of the internal saphenous vein and excision of the subfascial trunks and the larger tributaries of both internal and external saphenous systems, as well as excision of any prominent varicosities of other origin.

EXTERNAL SAPHENOUS SYSTEM

Failure to recognize that the disease process is generalized and that the external saphenous system is commonly affected is a frequent cause of unsatisfactory results. To some extent, this is accounted for by the fact that in the popliteal region the main trunk of the external saphenous system lies under a firm layer of fascia, thus interfering with the recognition of pathological changes. Also, the external saphenous system is subject to many anatomic variations.[2] In some patients, it fails to communicate with the popliteal vein, while in others it does so only by a vessel of inconsequential size. It may empty into the internal saphenous system at any level or into a deep muscular vein in the medial or lateral aspect of the thigh. On the other hand, the internal saphenous system may empty freely into the external saphenous, resulting in a large trunk in the popliteal region. In some cases, the involvement of the external saphenous system is the predominant factor in the venostasis. It should be accorded the same treatment as the internal saphenous system. The only consistently satisfactory method of adequate obliteration is excision under visual and palpable control.

The foregoing treatment proves adequate in most cases. It can be carried out through a series of short horizontal incisions with no undue disfigurement from scarring. When executed properly, it is well controlled and practically devoid of major complications. Owing to the progressive nature of the disease, an operation of less extent is followed by a high incidence of persistent or recurrent conditions.

RECURRENCE DUE TO INCOMPETENT PERFORATING VEINS

In pronounced cases, and particularly in recurrent and persistent cases following the above procedure, incompetent perforating veins are generally important factors in the venostasis. While some of these are obliterated in the excision of the main saphenous trunks with the larger tributaries, there remain those connecting the deep veins with the secondary saphenous tributaries and those connecting the superficial veins with the muscular veins. They occur mostly in the leg but occasionally in the thigh. Their anatomic pattern and their treatment have been well described by Sherman.[3] These must be exposed by direct dissection and ligated at or preferably beneath the enveloping fascia, so as to include any accessory perforators. As the dissection must be carried along the fascial plane for a considerable area, one or more vertical incisions are necessary.

In this procedure, the number of incisions and the extensive subcutaneous dissection necessitate particular precautions against wound complications. The patient should be kept ambulatory, and this is best accomplished by operation on only one leg at a time. In cases of extensive involvement, the operations should be staged. Attempt should be made to control edema, dermatitis, and ulcer with preoperative treatment by pressure dressings, so that incision is made only through intact and relatively healthy skin. In case of persistent dermatitis or ulcer, the operation should be staged. Excessive fibrous tissue at the base of an ulcer or under the skin may require excision. After operation, the wounds are protected by a firm dressing of gauze and elastic adhesive from the toes to the groin, and this is not disturbed until the removal of the sutures, on about the 12th day. After this, the leg is supported from the toes to the knee with a boot, consisting of Unna's paste (30 gm. of zinc oxide and 60 gm. each of mucilage of acacia and glycerin) and elastic adhesive tape, until the skin is in good condition and there is no tendency to swelling. Antibiotics are administered the first few days after operation.

The purpose of the treatment of varicose veins is to provide an adequate venous return and avoid the crippling effects of venostasis. While disfigurement due to operative scars should be kept at a minimum, this is of secondary importance and should be so considered in planning treatment. In a few cases, the disease process is so extensive that it is difficult to prevent venostasis even with the most extensive and repeated operations. When pregnancy proves to be a particularly aggravating factor, sterilization is occasionally justifiable. For proper evaluation of the result of treatment, the patient should be examined by the physician making the survey, as little dependence can be placed on a written communication from a patient or from a physician not particularly interested in the subject.

While the foregoing remarks are concerned with primary varicosities, they are applicable in principle to secondary varices resulting from iliofemoral thrombophlebitis. However, in the latter group, the treatment may not be as satisfactory if there is the added factor of postphlebitic sequelae, such as obstruction of the deep veins, damage to their walls and valves, and vasospasm. These conditions demand special consideration, which is beyond the scope of this paper.

SUMMARY

The treatment of varicose veins by high ligation with stripping and the injection of sclerosing solutions, either singly or in combination, is followed by an excessive incidence of unsatisfactory results. The injection of sclerosing solutions has limited, if any, place in the treatment of varicose veins. The basic operation should consist of the excision of the subfascial trunks, the larger subcutaneous tributaries and any associated varicosities of the internal and the external saphenous systems and varicosities of other origin.

70 Hasell St. (8).

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[2] Barrow, D. W.: The Clinical Management of Varicose Veins, New York, Paul B. Hoeber, Inc, 1948.

[3] Sherman, R. S.: Varicose Veins: Further Findings Based on Anatomic and Surgical Dissections, Ann. Surg. **130**: 218-232 (Aug.) 1949.

SURVEY OF X-RAY EXPOSURES IN HOSPITAL PERSONNEL

Egilda DeAmicis, S.B., Charles K. Spalding
and
Russell F. Cowing, Boston

Considerable interest in the problem of proper protection for x-ray personnel has been advanced since the rules and regulations pertinent to the use of isotopes as outlined by the Atomic Energy Commission have become widely known. As of March, 1949, the permissible dosage rate [1] as recommended by the National Bureau of Standards was "the maximum total dose to which any part of the body of a person shall be permitted to be exposed continuously or intermittently in a given time. It shall be 0.300 r per week. On the basis of 48 hours per week of uniform exposure, the permissible dosage rates are: 0.00625 r per hour (6.25 mr per hour) . . . ."

TABLE 1.—*Data from Film Badges Worn Weekly or Biweekly for One Year in Seven General Hospitals*

No. of Beds	*X-ray Unit*	No. of Technicians Wearing Badges	No. of Physicians Wearing Badges	Weekly Exposures (Mr) Above Permissible *Tolerance* Dose
84	Diagnostic, therapy	4	1	90, 20, 110 *
84	Radiography, fluoroscopy	13	4	40, 50, 140, 340 †
215	Diagnostic, therapy	13	4	None
250	Diagnostic, therapy, cystoscopy	6	10	None
240	Therapy, radiography	8	2	None
324	Therapy, diagnostic	5	1	0.01 ‡
314	Diagnostic, fluoroscopy	8	1	500, 20 §

* Exposure received by physician.
† Exposure received by one physician.
‡ Approximate exposure received by one technician, who held two children; this practice has since been discontinued.
§ Approximate exposures received by two technicians.

In 1922 Pfahler,[2] in a study of the general health of radiologists, examined films worn by several hundred workers and observed darkening correlated to the erythema dose received by a worker. In 1926 Quimby [3] developed a method for estimating radium dosages in terms of skin erythema dose. A series of films exposed to known amounts of radiation were developed along with test films worn by workers over a definite period of time. The blackening of the films was measured in terms of density on a photoelectric photometer. From the known exposures and density, the amount of exposure on the test film was determined. Quimby suggested that similar methods for estimating x-ray dosages could be evolved.

In 1932 Failla,[4] in a paper on radium protection, pointed out that it was very important to have films exposed to the same quality of radiation as that received by the worker. Wilsey,[5] in his work on photographic photometry and x-rays, reiterated the importance of spectral sensitivity. In 1936 Bell [6] carried out experiments to show that a quantitative method for the measurement of x-ray intensities by the photographic action of x-rays could be developed. In 1947 Hoerlin and Hicks [7] presented spectral sensitivity data for three types of x-ray films and further pointed out the difference in photographic response of x-ray films to different qualities of radiation.

In 1949 Cowing and Spalding [8] established a series of curves for relating blackening expressed in terms of density as measured by a densitometer to roentgen values produced by exposure to radium and various qualities of x-ray. These curves form the basis of a film-monitoring program now being carried out in several hospitals. In 1950 Baker and Silverman [9] reported a method with the use of a combination of silver filters and lead shields incorporated in a badge for the identification of radiation of different energies and interpretation of mixed exposure. Wilsey's [10] work in 1950 on the use of various types of film for monitoring stray x-rays and gamma rays is a comprehensive treatment of the subject, in which he related roentgen rays to density; he presented data for use in film monitoring in diagnostic radiology, in 220 kv. therapy and 1,000 to 2,000 kv. x-rays or radium gamma rays.

It may be seen from the above résumé of work done on photographic film with ionizing radiations that a film-monitoring program could be set up and dosages received by x-ray department personnel thereby measured. A considerable number of x-ray departments in general hospitals now require personnel to wear film badges.

We have been fortunate in having at our disposal space and equipment for carrying out a film-monitoring program. Before the program was instituted, a research project was carried out to establish the technique of developing films and evaluating their blackening in terms of roentgens.[8]

Dupont dental film no. 552-2, which has been especially developed as an indicator for radiation, was selected for use in film badges. The packet consists of two films, the more sensitive having a range of 0 to 3 r and the least sensitive, a range of 0 to 20 r.

Series of film packets were exposed to known amounts of x-radiation. The x-ray intensities were first measured

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Miss Florence Munson assisted in the preparation of data for this paper.

From the Biophysics Department, Cancer Research Institute, New England Deaconess Hospital.

This work was done under United States Atomic Energy Commission Contract AT(30-1)-901 with the New England Deaconess Hospital.

[1] Medical X-ray Protection up to Two Million Volts, Handbook 41, United States Department of Commerce, National Bureau of Standards, p. 1, 1949.

[2] Pfahler, G. E.: Effects of X-rays and Radium on the Blood and General Health of Radiologists, Am. J. Roentgenol. **9**: 647, 1922.

[3] Quimby, E. A.: A Method for the Study of Scattered and Secondary Radiation in X-ray and Radium Laboratories, Radiology **7**: 211, 1926.

[4] Failla, G.: Radium Protection, Radiology **19**: 12, 1932.

[5] Wilsey, R. B.: Photographic Photometry of Roentgen Rays, Am. J. Roentgenol. **32**: 789, 1934.

[6] Bell, G. E.: Photographic Action of X-rays, Brit. J. Radiol. **9**:578, 1936.

[7] Hoerlin, H., and Hicks, V.: Quantitative Relations Between the Photographic Response of X-ray Films and the Quality of Radiation, Non-Destructive Testing **VI**: 15, 1947.

with a Victoreen 25-r condenser type chamber. Since a point source gives off radiation that varies in intensity inversely with the square of the distance, film positions for various doses may be calculated. All film positions established by the inverse square law were checked with a minometer chamber.[10a] The films were next developed at a definite fixed temperature for a fixed time; fresh developer and sodium hyposulfite were used for each run. Along with each group of exposed film an unexposed film, serving as a control, was developed. Photographic graying and blackening of the films were measured on a photo cell type densitometer. The graying of the control film in terms of density units was subtracted from the density of the exposed films; density values were correlated with the known roentgen values and a density-roentgen curve established for the particular kilovoltage and filtration used. Since it is known that the photographic effect produced by radiation varies with the quality as well as the quantity of radiation,[11] a series of curves was established for various kilovoltages and with the amount of filtration commonly employed in x-ray work.

TABLE 2.—*Data from Film Badges Worn Weekly for Varying Periods of Time*

Location	No. of Beds	Length of Time Badges Worn	X-ray Unit	No. of Technicians Wearing Badges	No. of Physicians Wearing Badges	Weekly Exposures Above Tolerance
General hospital	155	6 mo.	Therapy, diagnostic	5	1	40, 140 mr *
General hospital	226	2 mo.	Fluoroscopy, radiography, therapy	3	1	None
Roentgenologist's office	...	2 mo.	Therapy, diagnostic, fluoroscopy	4	1	None
Roentgenologist's office	...	3 wk.	Fluoroscopy	1	2	None
Insurance company	...	2 mo.	Fluoroscopy	2	0	None

* Exposures received by technicians.

Such a set of standard curves is valid as a standard relating roentgen values to density only when the films worn by x-ray personnel are developed according to the same procedure as was followed in the establishment of the standard curves. It must be noted that an increase of only a few tenths of a degree in developing temperature will cause increased photographic blackening of the film, which will result in greater density. The indicated roentgen exposure would thus be greater than was actually received. A slight increase in developing time will also cause increased photographic blackening.

X-ray personnel in many hospitals wear film badges for a period of one week; in other departments the personnel wear the film badge for two weeks. These badges are usually worn on the lapel or outside of the laboratory coat or on the lead apron. Each film badge is numbered and is assigned to a worker. At the end of the week, the badges and a special form on which are the worker's name, badge number, and type of x-ray work (kilovoltage range) are returned to our laboratory.

The films are then developed and properly evaluated in terms of roentgens of exposure received by a worker. As in the establishment of the standard curves, a control film is always developed along with the used films, so that background may be subtracted from all density readings. Care must be taken to recognize factors other than radiation, which may fog or blacken film. Fumes, such as from illuminating gas, ether, ammonia, and formaldehyde, are known to blacken film.[8]

Because of the increased interest in the amount of overexposure received by technicians and radiologists in several hospitals and private offices, tables 1 and 2 are presented as a compilation of data accumulated over a period of one year. These data relate x-ray exposure to the type of work done by the technician or roentgenologist. It is believed that the figures presented in the tables show the over-all picture of the dosage received by members of x-ray departments in any hospital of comparable size. There have been no major structural changes in x-ray units that should cause any appreciable variation from these figures; neither have there been changes in technique.

It should not be inferred from the tables that it is unnecessary for a roentgenologist to wear a lead apron. It has been found in previous work that the maximum amount of radiation received by roentgenologists doing fluoroscopy without a lead apron is at waist level.[12] When a lead apron is worn, the locus of maximum dosage is usually on the right arm and shoulder. However, the data contained in the tables are obtained from one badge location, usually on the lapel. This area is partially protected.

COMMENT

It may be seen from the data presented (table 1) that, of 1,100 film badges worn by roentgenologists over a period of one year, seven films, or 0.63% showed exposures above the present permissible weekly tolerance (300 mr). Of 2,740 film badges worn by technicians over the same period, three films, or 0.11%, revealed overexposure. These figures are in good agreement with a previous nine-month survey[13] made by us, in which 11 of 2,655 films, or 0.41%, showed overexposure.

194 Pilgrim Rd. (Mr. Cowing).

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8. Cowing, R. F., and Spalding, C. K.: Photographic Effect of Various Radiations on Special Dental Packets, Radiology 52:423, 1949.

9. Baker, R., and Silverman, L. B.: Improved Film Badge for Personnel Monitoring, Nucleonics 7:26, 1950.

10. Wilsey, R. B.: The Use of Photographic Films for Monitoring Stray X-rays and Gamma Rays, Radiology 56:229, 1951.

10a. The minometer is a fountain pen type of ionization chamber used with a separate charging and reading electrometer, manufactured by the Victoreen Instrument Company, Cleveland.

11. Failla.[4] Wilsey.[5] Hoerlin and Hicks.[7] Cowing and Spalding.[8] Baker and Silverman.[9] Wilsey.[10] Barkla, C. G., and Martyn, G. H.: Photographic Effects of X-ray and X-ray Spectra, Phil. Mag. 25:296, 1913.

12. Cowing, R. F., and Spalding, C. K.: A Survey of Scattered Radiation from Fluoroscopic Units in 15 Institutions, Radiology 53:569, 1949. Morgan, R. H.: Physical Problems of Fluoroscopy and Spot-Film Radiography, Radiology 52:786, 1949.

13. Spalding, C. K.; DeAmicis, E., and Cowing, R. F.: Radiation Exposure Survey of X-ray and Isotope Personnel, Nucleonics 5:63, 1949.

HYPERTHERMIA (114 F RECTAL) WITH RECOVERY

Alfred A. Fracchia, M.D.

and

Alexander Brunschwig, M.D., New York

The maximal temperature rise in man from which there can be complete recovery is a question of both practical and theoretical interest, which perhaps, in the future, can be definitely answered on the basis of numerous well-documented reports. At present, a categorical statement concerning this is not possible. Undoubtedly, the duration of the hyperthermia is of great importance in survival. In the older literature, there are a number of fantastic reports of extreme hyperthermia, ranging from 120 to 170 F; it is obvious these are fradulent.

According to McNeal,[1] 114.8 F is the upper limit of hyperthermia that may be accepted as authentic without strong substantiating evidence. In his monograph on animal heat, Richet [2] listed 109 instances of hyperthermia, ranging from 107.6 to 112.2 F, with only 13 instances of survival, a survival incidence of about 11% for the group. Castellani and Chalmers,[3] under the classification "hyperpyrexial fevers," discuss instances encountered on the Gold Coast of Africa and in Ceylon in which the temperature reached 110 F, this being accompanied by delirium, then coma and death. DuBois [4] stated that in exceptional instances there has been survival after a temperature of 113 F. The following case report is an authentic instance of survival and complete recovery after a rise (albeit brief) in temperature to 114 F (rectally).

REPORT OF A CASE

G. L., a 56-year-old white woman, was first admitted to Memorial Hospital in May, 1951. In January, 1933, she had complained of a 15 lb. (6.8 kg.) weight loss during the previous six months; she was easily fatigued and noted enlargement of the abdomen. During exploratory laparotomy in another hospital, the macroscopic impression was that the patient had tuberculous peritonitis. An appendectomy was performed, and a nodule from the mesentery was excised for biopsy. The biopsy report was "omental implantation of cystadenoma." The patient was discharged a month later, after a stormy convalescence. There was a further weight loss of 31 lb. (14.1 kg.). (She now weighed 69 lb. [31.3 kg.]) In September, 1933, eight alternating doses of 8 to 16 minims (0.49 to 0.99 ml.) of Coley's toxin (an unfiltered mixture of killed erysipelas and prodigiosus cultures) were given by intra-abdominal injection. This caused temperature rises to 101 to 104 F. After this treatment, there was marked improvement; the abdomen decreased in diameter from 34½ in. (87.63 cm.) to 25¾ in. (65.41 cm.), during a four week period, and the patient's appetite became voracious. Eight injections of Coley's toxin were given, in October, 1933, and two injections were given in November. A hard, nodular mass, easily palpated, was found in the pelvis. Injections were given into the mass weekly during December, 1933, and January and February, 1934. In March, 1934, a second laparotomy was performed in another hospital. On macroscopic examination it was thought that the patient had extensive bilateral papillary adenocarcinoma of both ovaries, with metastases to the omentum, both broad ligaments, and over the surfaces of the liver. Hysterectomy and bilateral salpingo-oophorectomy and excision of metastatic masses were done. The histopathological diagnosis of papillary adenocarcinoma of both ovaries was then made. In June, 1934, injections of Coley's toxin were resumed and continued for a year. By December, 1934, the patient had gained 40 lb. (18.1 kg.).

In June, 1950, she complained of discomfort when sitting down. Pelvic examination revealed nodules, the size of grapes, in the rectovaginal septum. In April, 1951, the patient lost 10 lb. (4.5 kg.), and, on May 14, 1951, she entered Memorial Hospital. Pelvic examination revealed a mass 3 by 3 by 2 cm. in the right parametrium, and, with the examining finger in the rectum, a small cluster of nodules resembling a clump of grapes could be palpated in the cul-de-sac. These were thought to be recurrent nodules, and another course of injections of Coley's toxin was decided on. The patient received, on the day of admission, 1 minim (0.06 ml.) of this preparation. There was only a mild reaction, the temperature rising to 99.2 F; however, the patient vomited and had a headache. Thereafter, she received increasing doses, beginning with a daily dose of 2 minims (0.12 ml.), then 4 (0.25 ml.), 8 (0.49 ml.), 9 (0.55 ml.), 12 (0.74 ml.), 14 (0.86 ml.), 20 (1.23 ml.), and finally 22 minims (1.36 ml.) intravenously. The last mentioned amount resulted in a temperature rise to 103.4 F. On May 25, 1951, the patient received 24 minims (1.48 ml.) of Coley's toxin intravenously. An hour later, she had a severe chill that lasted 45 minutes. Two hours later, her temperature had risen to a level above the calibration of the rectal thermometer (later found to be 114 F). There was mental confusion, marked apprehension, facial congestion, and cardiac arrhythmia. Two other temperature readings were taken with two other thermometers, and similar readings were obtained.

Ice packs were placed about the patient. Intravenous infusion of 5% dextrose in isotonic sodium chloride was instituted, and her body was continuously sponged with cold water and alcohol. Sodium salicylate, 1 gm., was injected intravenously, and acetylsalicylic acid, 1.3 gm., was administered orally. Oxygen was administered by the nasal route. In 15 minutes, the rectal temperature had dropped to 104 F, the arrythmia had disappeared, dyspnea had subsided, cyanosis was less pronounced, apprehension had abated, and the patient fell asleep, apparently exhausted. The next day the patient appeared normal, and she had no later complaints.

Since the columns of mercury in three thermometers all rose above the calibrated segment, the levels they indicated were determined in the following manner. 1. The distance to which the mercury rose above the highest calibration in the thermometer, which was 110 F, equaled the distance from 106 to 110 F, and thus indicated 114 F. 2. A water bath was heated to 114 F in the laboratory, and a laboratory thermometer was used for this determination. A clinical thermometer that had not been shaken down and had been used on the patient was inserted into the bath, and the level of the mercury, presumably at the 114 F level, did not change. The water bath was then heated to 115 F, and the level of the mercury in the clinical thermometer rose.

Results of an electrocardiogram taken shortly after the rise and fall in temperature were normal. A complete blood cell count was taken shortly after the rise in temperature and a few hours after recovery. The hemoglobin level remained essentially unchanged, dropping from 12.5 to 12 gm. per 100 cc., and the leukocyte count rose from 6,200 to 21,700. On May 30, 1951, the patient was discharged, with no complaints. She was examined again in mid-July, 1951, and the masses in the cul-de-sac and right parametrium had increased in size slightly. The patient's general condition was satisfactory, and there were no abnormalities attributable to the hyperpyrexial episode.

From the Memorial Hospital Center for the Treatment of Cancer and Allied Diseases.

1. McNeal, W. J.: Hyperthermia, Genuine and Spurious, Arch. Int. Med. **64**: 800 (Oct.) 1939.
2. Richet, C.: La chaleur animale, Paris, Felix Alcan, 1889.
3. Castellani, A., and Chalmers, A. J.: Manual of Tropical Medicine, ed. 3, London, Baillière, Tindall & Cox, 1919.
4. DuBois, E. F.: Why Are Fever Temperatures Over 106 F. Rare? Am. J. M. Sc. **217**: 361 (April) 1949.

SUMMARY AND CONCLUSIONS

The history of a patient is reported in whom an extensive ovarian carcinoma was present 18 years ago. Much of this neoplasm was excised 17 years ago, at which time histological examination confirmed the diagnosis. The only other therapy consisted of injections of Coley's toxin. Irradiation therapy was never instituted. The patient remained asymptomatic, and the neoplasm was apparently inactive for 17 years. The neoplastic process recently became active again, and, in the course of intravenous injections of Coley's toxin, a precipitous rise in temperature to 114 F (rectal) was noted; this degree of hyperthermia was authenticated by laboratory control of the clinical thermometers employed. This is one of the highest rises in temperature authentically observed in man. It is believed that the brief duration of this hyperpyrexial state is the principal reason for the full recovery that ensued.

444 E. 68th St. (Dr. Brunschwig).

CLINICAL NOTES

DELIRIUM TREMENS TREATED WITH INTRAVENOUSLY ADMINISTERED CORTICOTROPIN (ACTH)

Karl Fischbach, M.D., New York
Eunice M. Simmons, M.D.
and
Randle E. Pollard, M.D., Bronx, N. Y.

The treatment of delirium tremens, as advocated until recently,[1] consisted mainly of sedation and supportive measures. With the availability of corticotropin (ACTH) we now have a potent therapeutic agent that can effect a remission in an amazingly short time. Good results with divided intramuscular doses have been reported,[2] but the large total dose required has raised an objection to its use. Gordon [3] has reported that the action of corticotropin is enhanced as much as 20 times by its intravenous administration. The favorable use of small doses of corticotropin by this route has been shown by Mandel and others.[4] With this in mind, we recently had the opportunity to contrast the two methods of therapy.

REPORT OF CASES

Case 1.—A 42-year-old white man was admitted to Fordham Hospital on Sept. 17, 1951, in a hyperactive state, with a marked alcoholic odor to his breath. He gave a history of alcoholism for the past five years, during which he consumed beer, whisky, and wine in varying amounts daily. His present illness began two weeks before admission, with steady imbibition of alcohol without food. There was some clouding of the sensorium, in that he could not remember the details surrounding his hospitalization.

The physical examination on admission revealed the patient to be well-developed, well-nourished, and dehydrated. He was nervous and agitated but answered questions somewhat rationally and coherently. His blood pressure was 138/98 mm. Hg, pulse rate 76, and rectal temperature 100 F (37.8 C). The head and neck examination revealed dry oral mucosa and coarse tremor of the tongue. The heart was normal in size, with sounds of good quality and with regular sinus rhythm. The lungs were clear throughout. The liver edge was palpated 2 cm. below the costal margin; otherwise the abdomen was normal. The extremities showed hyperactive deep tendon reflexes and coarse tremors bilaterally. No pathological reflexes were elicited.

Laboratory Data.—The white blood cell count numbered 3,800, with 67% neutrophils, 30% lymphocytes, and 3% monocytes. The Mazzini test and urinalysis were normal, and the erythrocyte sedimentation rate was 62 mm. per hour. Hemoglobin (electrocolorimeter method) was 14 gm. per 100 cc.

Hospital Course.—During the first hospital day the patient was sedated with paraldehyde. An adequate fluid intake was maintained orally, and large doses of vitamin B and B complex were administered intramuscularly. The patient continued to be hyperactive, and that night he showed evidence of auditory and visual hallucinations. On the second day the patient continued to be hyperactive, noisy, and delirious. Sedation, in the form of paraldehyde, and fluids were continued by oral administration. Parenterally administered vitamin therapy was also maintained. On the third hospital day the patient was completely irrational, and his hallucinations induced such violent struggles that restraints were necessary to prevent him from injuring himself. Paraldehyde sedation was continued. Orally administered fluids were augmented by 2,000 cc. of sodium chloride solution, with 5% glucose and vitamin B complex administered parenterally. In spite of this therapy, the delirium and struggles continued unabated, and the patient died 78 hours after admission.

Case 2.—A 50-year-old white man was admitted to Fordham Hospital on Sept. 18, 1951. A history was not obtainable at that time. He was extremely undernourished and in an excited state, showing continuous jerking movements. He was completely disoriented as to time and place and appeared to have auditory and visual hallucinations.

His examination revealed a blood pressure of 140/90 mm. Hg, a regular pulse rate of 116, and a rectal temperature of 99 F (37.2 C). The head and neck examination showed dry mucosa, poor dental hygiene, and coarse tremor of the tongue. There was no nuchal rigidity. The chest examination showed his lungs to be resonant throughout, with breath sounds decreased in the right base. Percussion revealed no heart enlargement, and heart sounds were normal, with a regular sinus rhythm and no murmurs. The examination of the abdomen revealed the liver edge to be 2 cm. below the costal margin; it was not tender. No other abnormalities were noted in this region. Coarse tremors were found in the extremities; the deep tendon reflexes were hyperactive; and no pathological reflexes were elicited.

Laboratory Data.—The white blood cell count was 10,850, with a differential count of 70% neutrophils and 30% lymphocytes. Results of the Mazzini test and urinalysis were normal. Hemoglobin was 15 gm. per 100 cc. The erythrocyte sedimentation rate was 5 mm. per hour.

Hospital Course.—On the day of admission the patient was given sedation in the form of paraldehyde and phenobarbital. A sodium chloride and glucose solution containing 10 cc. of adrenal cortical extract (eschatin®) was given intravenously. During this first day the excitement stage continued, and restraints were necessary to prevent the patient from injuring himself. On the second hospital day the patient continued to be completely disoriented. Active auditory and visual hallucinations were evident and caused continuous motion and struggle. Sedation and parenterally administered fluids containing adrenal cortical extract were repeated in similar manner as on the first day, without any appreciable change in the patient's condition. On the third hospital day he declined rapidly, the rectal temperature rose to 102.4 F (39.1 C), and the pulse rate was 110, weak and thready. The patient was delirious, his speech was incoherent and unintelligible, and activity was constant and purposeless. He perspired profusely and collapsed, and his condition was

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From the Medical Department, Fordham Hospital, Bronx, N. Y., Blase Pasquarelli, M.D., Director.

1. Cecil, R. L. F., and Loeb, R. F., editors: Textbook of Medicine, ed. 8, Philadelphia, W. B. Saunders Company, 1951, p. 538.
2. Smith, J. J.: Endocrine Basis and Hormonal Therapy of Alcoholism, New York State J. Med. **50**: 1704 (July 15) 1950.
3. Gordon, E. S.: Adrenal Stimulation by Intravenous ACTH, read before the Central Society for Clinical Research, Chicago, Nov. 3, 1950; abstracted, J. Lab. & Clin. Med. **36**: 827 (Nov.) 1950.
4. Mandel, W., and others: Intravenous Use of Pituitary Adrenocorticotropic Hormone (ACTH), J. A. M. A. **146**: 546 (June 9) 1951.

considered extremely grave. At this time all sedation was stopped. He was given 25 mg. of corticotropin in 1,000 cc. of 5% glucose in distilled water, intravenously, over a period of seven hours. The solution also contained 1,000 mg. of ascorbic acid. Another 2,000 cc. of fluid was given by hypodermoclysis. On the fourth hospital day, about 10 hours after the infusion of corticotropin, the temperature dropped to 101 F (38.3 C) and the pulse rate to 96 per minute. The patient remained disoriented but had occasional lucid moments; his speech was more coherent; and his movements were less constant and more purposeful. Another infusion of 25 mg. of corticotropin in glucose solution with ascorbic acid was administered intravenously over a period of 12 hours. Additional fluids were supplied by hypodermoclysis. By the fifth hospital day the patient's temperature had dropped to 100 F (37.8 C) and the pulse rate to 90 per minute. He was completely lucid and coherent, oriented, answered questions rationally, and was free of hallucinations. He sat up and asked for food and was able to retain food and fluid throughout the day. An examination showed only the persistence of the coarse tremors of the hands. Since that time he has remained completely in contact with his environment, and recovery has been uneventful.

A history was then obtained of his having been a beer drinker for 18 years, but that during the past six weeks he had consumed six to eight "shots" of whisky with two or three quarts of beer daily. Although he stated that he had eaten eggs and milk daily, his state of nutrition contradicted this. He had begun to vomit some days prior to arriving at the hospital.

COMMENT

One outstanding observation in both of these cases was the futility of attempted sedation. It was only after large doses of paraldehyde were administered that the patients were subdued for a short time. Persons in delirium tremens are suffering not only from the ravages of alcohol but also from marked nutritional deficiencies. A further depression of the metabolic processes by strong sedation can in no way contribute toward their recovery. In fact it tends to aggravate the confused mental state already present, which leads to further struggle and eventual exhaustion of the patient. It would seem that this occurred in these cases.

The use of supportive measures, such as parenterally administered fluids, electrolytes, glucose, warmth, bed rest, vitamin B and B complex, and adrenal cortical extract did not alter the clinical course in either case.

Corticotropin was not available for the first patient. The second patient received the corticotropin intravenously with dramatic response, passing from a moribund state to complete recovery in about 36 hours.

The purpose of this report is to emphasize both the rapid effect of corticotropin given intravenously and the adequacy of small doses by this route.

SUMMARY

Two cases of delirium tremens are reported, contrasting the old and the new methods of therapy of this extremely urgent illness.

870 Seventh Ave. (Dr. Fischbach).

Placenta Previa.—The older textbooks do state . . . that once placenta previa is diagnosed the pregnancy should be completed by "hook or crook." That practice is not followed, so far as I know, in any good teaching institution in this country at the present time. I don't know of any obstetricians who do that, either; we watch patients with reasonably certain placenta previa carefully until the time of viability is reached.—W. M. Allen, M.D., Bleeding During Pregnancy, *Postgraduate Medicine*, February, 1952.

RAPID BLOOD GROUPING AND Rh TYPING OF LARGE NUMBERS OF PERSONS

A CARD TECHNIC FURNISHING A PERMANENT RECORD OF THE ORIGINAL TESTS

William Thalhimer, M.D., Valhalla, N. Y.

Large amounts of blood, of known group and Rh type, to be used for transfusions, might be needed for the treatment of persons severely injured as a result of many kinds of disasters, e. g., fires, explosions, and wrecks. Even under conditions of civilian practice, sizeable amounts of blood are needed quickly to treat patients with burns, bleeding gastric ulcers, hemorrhage, and many other conditions. Therefore, it becomes increasingly important that one be prepared by knowing the blood group and Rh type of large numbers of persons who can be called on to furnish quickly the types of blood needed.

Efforts, in the past, to secure this information have been known as plans for "mass grouping." However, so many errors occurred in mass grouping, which can be eliminated today, that perhaps it would be better if this term were dropped. These former errors were usually caused by the use of inferior diagnostic serums, poor technic mainly by insufficiently trained helpers, and clerical errors. Today, slide tests and anti-A, anti-B, and anti Rh_0 (anti-D) diagnostic serums meeting the specifications of the National Institutes of Health are readily available and are so potent and specific that, with a proper technic, results with their use are thoroughly reliable.

There still remains the possibility of clerical errors in recording of the results of the tests. Also, it has been impossible to check on these errors, since the tests, whether performed in test tubes or on glass slides, are destroyed when, after each day's work, the glassware is washed. A method has been needed whereby the test itself can be preserved permanently, by a process of drying, so that the result of the test can be examined and checked at any future time and compared with the record made at the time the test is performed. These tests can be read at the end of each day by an expert, and misinterpretations by the inexperienced can be eliminated.

Allen, Diamond, and Madden[1] have recently described an excellent method for grouping large numbers of persons. They have described in detail not only a careful technic but also a plan for the entire setup and organization of a team for the systematic testing and handling of large numbers of persons in a minimum of time with a minimum number of trained technicians and secretarial helpers. They have pointed out where errors may creep in and have devised ways of reducing these. However, even with their excellent teamwork and with their well-trained and skilful workers, there were some

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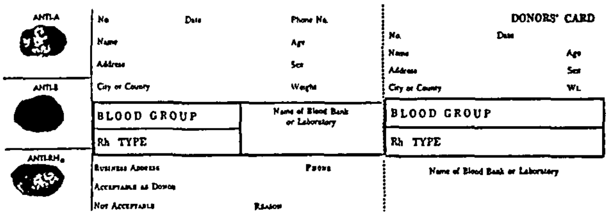
From the Division of Pathology, Grasslands Hospital, and the Department of Laboratories and Research of Westchester County, Valhalla.

[1] Allen, F. H., Jr.; Diamond, L. K., and Madden, H. J.: An Accurate Method for Rapid Blood Grouping of Large Numbers of People, New England J. Med. **244**: 925-930 (June 21) 1951.

technical and clerical errors. Although the total number of their errors was small, it is of interest that clerical errors accounted for one-third of the total number. It is difficult to conceive of a further reduction of these errors if any of the standard test tube or slide methods are used.

In all probability, it will never be possible to eliminate completely occasional technical errors in the performance of tests of the types required for blood grouping and Rh testing. In the usual, careful blood bank technic, there are routine checks that will discover errors in time. These checks are proving blood groups by testing individual serums for naturally occurring anti-A and anti-B isoagglutinins with suspensions of known A and known B cells. Cross matching tests will usually discover mistakes in ABO grouping of either the patient's blood or that of the prospective donor.

With large-scale grouping and Rh testing, reliance must be placed on doing and reading the tests correctly, since with present technics there is no way of preserving the tests themselves for a more expert observation and check later. An accurate and rapid method, which would give the results of the tests in the form of a permanent record, would apparently have a real value. In particular, such a method would allow for checking and correcting any clerical mistakes in recording the results.



ANTI-A

ANTI-B

ANTI-RH$_0$

No Date Phone No.
Name Age
Address Sex
City or County Weight

BLOOD GROUP

Rh TYPE

Name of Blood Bank or Laboratory

Business Address Phone
Acceptable as Donor
Not Acceptable Reason

DONORS' CARD

No. Date
Name Age
Address Sex
City or County Wt.

BLOOD GROUP

Rh TYPE

Name of Blood Bank or Laboratory

Fig. 1.—Card showing blood grouping and Rh testing and appearance of positive and negative reactions. This blood was group A, Rh$_0$ (D) positive.

In 1942 a method[2] was described for performing blood-grouping tests on cards with concentrated globulin fractions of pooled A or B serums secured from healthy donors. This test was found to be reliable; when the tests dried on the cards, the positive and negative reactions could be easily differentiated. The dried tests adhered firmly to the card, could not be rubbed off or easily scratched off, and gave a permanent record of the subject's blood group. This was before methods had been devised for stimulating donors to secure the excellent and potent blood-grouping serums easily available today. The present day serums work even better and quicker with the card technic than did the original globulin fractions.[3]

Excellent slide test anti-Rh$_0$ (anti-D) serum is available today, which gives completely reliable results when the tests are carried out on a warm viewing box that can be rocked from side to side. With these serums a method has been developed for performing grouping and Rh$_0$ typing on cards and drying the tests rapidly, thereby giving a permanent record. A number of technical details have been introduced that make for accuracy and speed, and it is recommended that they be followed carefully.

The tests are done on individual cards for each blood specimen, thereby eliminating the possibility of accidentally placing the blood in the wrong place when more than one test is performed on a slide or of splattering blood or diagnostic serum. A sample of the card being used is illustrated in figure 1, but this can be modified to suit any program's special needs. It is important that the card be thick enough so that the moistening occurring during the test will not cause the card to buckle unevenly.

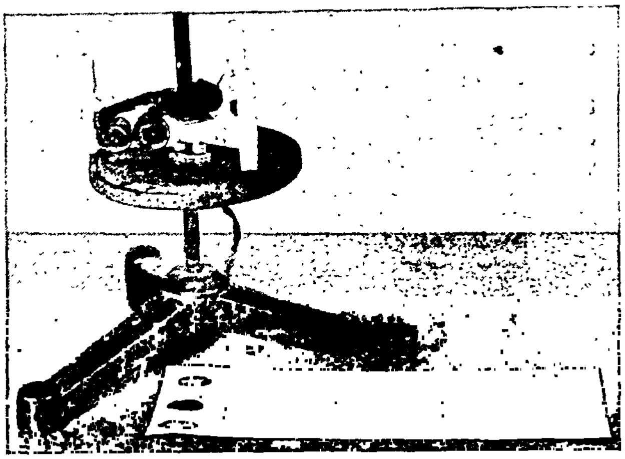


Fig. 2.—Electric hot plate and card beneath during performance of the test.

The cardboard[4] should be specially chosen to have a firm, smooth surface and to absorb moisture very slowly, so that the test can be completed before this occurs. Otherwise a ring will be left by the drop of blood when it is placed on the card. A firm, unabsorbing surface is also needed, to prevent fuzz being scraped into the test area when blood and serum are stirred together with a toothpick. Toothpicks have been found to be better than wooden applicators.

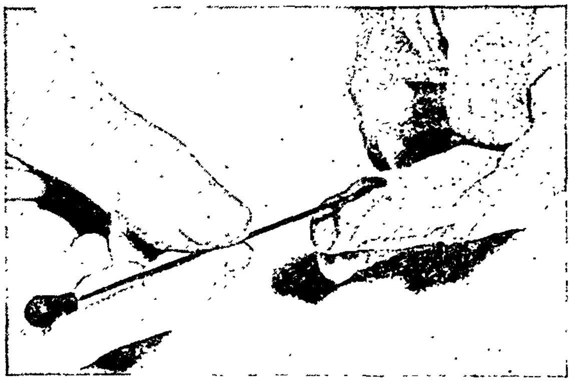


Fig. 3.—Long glass capillary tube, with small rubber bulb, being filled with blood after the finger has been pierced with a lancet.

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[2] Thalhimer, W., and Myron, S. A.: Globulin Fractions of A and B Agglutinating Serums for Blood Typing: A Rapid Card Technic Furnishing a Permanent Record, J. A. M. A. **118**: 370-372 (Jan. 31) 1942.

[3] The card technic for ABO blood grouping has been used satisfactorily for years at the Blood Bank of Dade County (personal communication to the author from Dr. John Elliott).

[4] Thick Springfield tag cardboard has been found satisfactory. Undoubtedly others are equally good.

There are three rectangles on the card, labeled anti-A, anti-B, and anti-Rh$_0$ (anti-D). A large drop of the appropriate diagnostic serum is placed in each rectangle. After the finger is pierced with a lancet, a capillary glass tube with a small perforated rubber bulb [5] fitted on one end is filled with blood by capillarity. The perforation in the bulb is then covered with the index finger; by compression of the bulb, one small drop of blood is placed alongside, but not in contact with, each of the drops of anti-A and anti-B serums and two large drops alongside the drop of anti-Rh$_0$ serum. Then in each space the serum and blood are rapidly and thoroughly mixed by stirring with a toothpick. The mixture should be spread out to form an oval or rectangle, 4 by 2.5 cm.,[6] with a smooth edge. The long axis should be in the direction of the long side of the rectangle. Immediately after three tests are mixed, the card is placed under an inverted electric hot plate, which is elevated about 6 in. above the work table. The hot plate serves two purposes. It rapidly furnishes heat necessary for the action of the anti-Rh$_0$ (anti-D) serum and, after the reaction is completed, quickly dries the test. It is well to leave the card undisturbed for one minute, to allow the blood grouping tests (A, B, O) to go on to completion at room temperature. Then the card should be lifted and, while it is still being held under the hot plate, tilted slowly back and forth far enough to allow the blood serum mixture to run from one end of the oval to the other. This procedure is necessary to allow the agglutinates in the Rh$_0$ (D) positive bloods to become large. In the completed tests of Rh$_0$ (D) positive blood,[7] the pattern of large clumps with practically clear spaces between is very striking and cannot be mistaken for a negative reaction. The agglutination is usually clearly detectable in 15 to 30 seconds and the reaction complete in about two minutes.

The card is then replaced on the desk under the hot plate and the tests allowed to dry. They are usually entirely dry in seven or eight minutes. The work can be speeded up by placing the tests under a second or even a third hot plate for the drying process. It is important that the cards be completely flat while the tests are drying, so that the specimens with a negative reaction dry with a smooth surface and without any of the blood serum mixture piled up unevenly. When this precaution is taken, it is impossible to mistake a negative for a positive reaction.

With the excellent anti-A and anti-B serums available and the amount of whole blood used, the positive reactions will occur almost immediately after mixing, usually even before the card can be placed under the hot plate. Heavy mixtures of blood, or cells, have been found to react with anti-A or anti-B serums more quickly and with more clear-cut results than when small amounts of blood or cells are added to the diagnostic serums, as advocated by some workers.

When dried, the blood in all three tests is very dark brown, with a smooth, hard, permanent surface. The dyes added to commercial anti-A and anti-B serums (blue—anti-A and yellow anti-B) leave their identifying stain in the background of the dried blood smear, thus allowing a check that these serums were not reversed in the rectangles for ABO grouping. Tests performed in the past [1] with anti-A and anti-B globulin preparations remained unchanged when kept as long as six years. The card tests should be filed away in steel cabinets—proof against vermin that might eat off the dried blood and, of course, away from fumes. Present day plastic coating or clear shellac may be used to seal over the dried tests for further protection against moisture or accidental wetting.

One technician can place the drops of the three diagnostic serums in the labeled rectangles. The technician then pierces the donor's finger so as to obtain a large, free-flowing drop of blood, fills the capillary glass tube, places one or two drops of blood alongside each drop of serum, and mixes the blood and serum as directed. The card can be passed to a second technician, who places it under the hot plate and completes the test.

COMMENT

Blood specimens from 300 subjects have been tested by routine methods in the blood bank and with the card tests, and the results have been in complete agreement. The use of the glass capillary tubes for transferring the finger blood to the cards eliminates the chance of smearing blood into the other testing areas and gives drops of blood uniform in size. Also, the use of separate cards for each donor being tested removes the possible error of wrongly placing blood when blood specimens from as many as 10 persons are tested on one large glass plate or card. Clerical errors should be eradicated and, if suspected, can be checked by reexamination of the original dried tests.

Blood containing the D^u antigen may be missed by the anti-Rh$_0$ (anti-D) slide test serums usually available. Should it be desirable to test for D^u, the following method could be used. Since the above tests can be read accurately in two to three minutes, the donor can be held until these readings are made. Then a second sample of blood can be taken in a fresh capillary tube from all Rh$_0$ (D) negative donors. These samples could be tested subsequently for D^u by the indirect Coombs method.

This report is made now because it is believed that many laboratories will soon be called on to determine the blood group and Rh$_0$ (D) type of large numbers of persons. It is hoped that this method will be tried in large projects and its accuracy and utility investigated by others.

CONCLUSIONS

A rapid method with the use of a card technic is described for determination of the blood group and Rh$_0$ (D) type of large numbers of persons. The method yields a permanent record of these tests, which can be kept in a file and referred to at any time. Clerical errors should be eliminated or can be checked if they are suspected.

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[5] The capillary glass tubes recommended are 1.5 to 2.0 mm. in outside diameter and 100 mm. long. They are considerably larger and longer than the capillary tubes usually used for hemoglobin determination by the specific gravity copper sulfate method. The tubes recommended deliver four large drops of blood. They can be obtained from the Glasco Products Co., 30 Rockefeller Plaza, New York. The small rubber bulbs can be obtained from the West Co., Philadelphia.

[6] In a personal communication, Dr. John Elliott has suggested that the reaction is better and the clumps larger when the test is spread out over this large area.

[7] Should further typing with an anti-Rh'$_0$ (anti-CD) serum be desirable, an additional square for this test may be added to the card.

TICK PARALYSIS

REPORT OF A CASE IN FLORIDA

Robert M. Alexander, M.D., Lake City, Fla.

Fatal involvement of the central nervous system due to the bite of a tick has long been recognized. However, a reminder at this time of the existence of the disease entity and its manifestations might be valuable.

Briefly, the history goes back to 1824, when Howell in Australia described "a small insect that buried itself into the flesh and caused the destruction of man or beast if not removed in time." In 1843 Backhouse described a tick that destroyed cattle and sheep after paralysis of the hindquarters had occurred. Bancroft, in 1844, described weakness of cats and dogs occurring two to three days after the attachment of ticks. Death followed unless the tick was removed. In 1904 Mally, in South Africa Cape Colony, reported paralysis of sheep following tick bites. Removal of the tick cured the sheep within a few hours. Temple and Todd, in 1912, described several human cases occurring in North America, and Cleland described a fatal human case in Australia, in which a tick had been removed shortly before death. The syndrome was produced experimentally in 1913 on young sheep with the use of adult female wood ticks, Dermacentor andersoni. No explanation of the mechanism was advanced at that time.

The disease has been reported in man in the northwestern and eastern seaboard regions of the United States, British Columbia, Australia, Yugoslavia, Crete, and South Africa. As far as can be determined this is the first case reported in Florida, although the disease is apparently known by word of mouth.

A general description of the syndrome follows: The vector, which may be the wood tick Dermacentor andersoni Stiles in the western United States or the dog tick Dermacentor variabilis Say in the eastern United States, often lodges on young female children, where its concealment in the longer hair allows sufficient time for the syndrome to develop. The tick usually feeds from 9 to 16 days and apparently releases a toxin that is at its height of potency around the fifth or sixth day. It has been found that the female ticks, which feed longer, usually release this toxin only in the gravid state. The toxin, which is neurotrophic, acts on the spinal cord and bulbar nuclei.

A typical description would be that of a young female child arising one morning noting some weakness of her legs and during the next 24 to 48 hours showing progressive loss of locomotion and ascending paralysis. The sphincters may or may not be involved; strangely enough, except for apprehension, the patient does not feel ill. There may be vertigo, numbness, and paresthesia, but cutaneous anesthesia is rare. The temperature is usually not elevated over 100 F until near the terminal stage. Occasionally there is vomiting, photophobia, and extreme restlessness. Respiratory distress may occur suddenly and unexpectedly and usually presages a fatal termination. Death may be preceded by convulsions and is due to respiratory failure. Ascending paralysis with bulbar involvement followed by death is the course unless the tick is found and removed. Usually, if the tick is removed before bulbar involvement, there is marked improvement within a few hours and recovery in two to seven days.

REPORT OF A CASE

On April 12, 1951, a 24-year-old white man was admitted to the Veterans Administration Hospital, Lake City, Fla. He stated that he had had an episode of influenza in December, 1950, from which he apparently recovered completely. Three weeks before admission to the hospital he had a minor upset, characterized by nausea, diarrhea, and weakness, which lasted a few days. He apparently recovered from this, and one week later he noted the sudden onset of pain in his lower back, which persisted for several days and then subsided. According to the patient, during the first week in April he noted the development of weakness of both arms, followed in 24 hours by severe weakness of both legs. He noted no tingling, numbness, or loss of sensation associated with this condition and no pain in any portion of his body. At the time of admission to the hospital he could move his fingers, feet, and toes slightly but could not lift his arms or legs. He had considerable difficulty in opening his mouth voluntarily and in swallowing.

His past history revealed that he was a fisherman in Florida and prior to the present illness had been on a fishing trip that involved going through the woods. It was learned that he and his dog had been bitten by a number of ticks during this expedition and that prior to his illness the dog, from whom a number of ticks had been removed, had paralysis of his hindlegs and died within two days. All ticks had been removed from the patient before admission. In other respects the past history was noncontributory.

On admission the patient appeared to be normally developed and nourished but anxious and acutely ill. He was unable to move about in bed, and he was having difficulty with mucus in his pharynx. Results of examination of the skull were negative. There was pain on anteflexion of the neck. The pupils reacted to light and accommodated normally. Funduscopic examination revealed a small white area about the left disk but no papilledema, hemorrhage, or exudates. Transient nystagmus to the right was present. The ears and nose were normal. The patient had difficulty in opening his mouth voluntarily, but it could be opened easily by the examiner. The posterior portion of the pharynx showed signs of irritation and trauma. There was no pharyngeal membrane present. The lungs were entirely clear to auscultation and percussion. The blood pressure was 140/90. The heart was normal except for tachycardia, 100 beats per minute. The upper extremities showed decreased tone; the lower were normal in tone. There was no edema and no limitation of motion of the joints. Neurological examination revealed an anxious, sweaty patient with flushed face. Sensorium was clear. Some nuchal rigidity and tenderness were noted. The deep tendon reflexes in the upper and lower extremities were markedly diminished. The urinary and rectal sphincters were normal. No changes in sensation to touch, pinprick, or vibration were noted. The position sense was preserved. The results of the remainder of the physical examination were within normal limits.

The blood cell count showed 5,500,000 red blood cells, with 18 gm. of hemoglobin, and 15,000 white blood cells with 83% polymorphonuclear cells, 12% lymphocytes, 4% monocytes, and 1% eosinophils. Urinalysis showed albumin 3+ and many hyaline casts. The serologic reaction of the blood was negative. A smear for malaria was negative. The spinal fluid examination showed normal pressure, 2 cells, sugar 89 mg. per 100 cc., total protein 35 mg. per 100 cc., negative complement fixation, and a negative gold curve.

Hospital Course and Treatment.—At the time of the patient's admission to the hospital his condition was far advanced, with paralysis of the four extremities and muscles of deglutition. He was fed by Levine tube. Atropine was used to reduce the secretions of the pharynx and bronchi. Phenobarbital sodium was used to combat his restlessness. He was given chloramphenicol,

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Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are a result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administrati

1 gm. three times a day, and dimercaprol injection, eight doses. Suction of the mucus from his oral pharynx was carried out as needed; despite this regimen, labored respirations and cyanosis developed, which did not respond to oxygen therapy. He died suddenly approximately 24 hours after admission to the hospital. Postmortem examination was not done.

SUMMARY

A case of tick paralysis in Florida with fatal termination is described. It is emphasized that the only treatment is the early removal of the offending ticks.

ANENCEPHALY IN FETUSES OF MOTHER WITH TETRALOGY OF FALLOT

NORMAL INFANT FOLLOWING BLALOCK OPERATION

Charles B. Olim, M.D.
and
Henry B. Turner, M.D., Memphis, Tenn.

A few congenital cardiac patients with the tetralogy of Fallot reach adult life. These persons are usually handicapped and lead restricted lives. Pregnancy in a patient so afflicted may be attended by serious consequences in both the mother and child. Black-Schaffer[1] reported an infant of dwarfed stature and marasmus born to a 26-year-old mother with cyanotic congenital heart disease. Talbot[2] believed that most congenital malformations that were the result of lack of embryonic development were not hereditary defects but were acquired in utero. He considered that these developmental defects were due to injury to the placenta during the early weeks of pregnancy, with maternal hematogenous infection of the placental blood vessels being responsible. Talbot described 20 consecutive cases of deformed babies in which there was evidence of placental damage near the base of the cord. Six of the 20 infants were anencephalic.

Ingalls and associates[3] in 1950 reported that they were able to produce fetal death and congenital defects in the mouse by subjecting pregnant mice to anoxia under controlled conditions. An inspissated plug, which appears in the vagina of the white mouse shortly after copulation, enables investigators to accurately determine the date of pregnancy. By producing anoxia in the animals on various days and for varying periods of time, Ingalls observed products of gestation ranging from small placental fragments, with or without absorbed fetal components, through gross fetal defects and monstrosities to normal appearing pups.

The most interesting anomaly in the Ingalls series was anencephaly. This was found once in each of three litters of mice whose mothers had been exposed to anoxia on the eighth day of gestation. The probability that all three litters would contain such a monstrosity after a maternal insult on any particular day was less than 1 in 5,000. This suggested to Ingalls that anencephaly, like cyclopia in the fish[4] and cleft palate in the rat,[5] is stage specific in the sense that it arises only at some critical phase of cephalic development.

This case report concerns a young woman who had a congenital cyanotic cardiac abnormality, diagnosed as tetralogy of Fallot. Her course during three pregnancies is described.

REPORT OF CASE

Mrs. D. P., 18 years of age, was first seen in consultation on May 19, 1950. Three days before, she had delivered prematurely, at six and one-half months, an anencephalic fetus. She was extremely cyanotic, with clubbing of her fingers and toes. Discolored acneiform lesions were prominent on her face. The blood pressure was 120/70 mm. Hg. A soft systolic murmur was heard over the third left interspace in the midclavicular line. There apparently was no cardiac enlargement. The red blood cell count was 5,810,000, and hemoglobin, 16.2 gm. The electrocardiogram showed right axis deviation.

The patient's past history revealed cyanosis since birth, with dyspnea on moderate exertion. She frequently had to squat when tired, and stated that she could walk only about one-half block without resting. In 1948, at the age of 16, she had her first pregnancy, which terminated by abortion at six months, also with an anencephalic fetus.

On June 19, 1950, fluoroscopy and roentgenograms of the chest revealed a heart of normal size, with a slight convexity in the pulmonary conus and decreased vascular markings in the lung fields. The aorta descended on the left side. The final diagnosis at this time was congenital heart disease with tetralogy of Fallot. On July 6, 1950, operation was performed at the John Gaston Hospital. The left side of the chest was entered through the third intercostal space. The left pulmonary artery was short but of adequate diameter, and the pulmonary arterial pressure was obviously low. A Blalock procedure[6] was carried out, consisting of an anastomosis between the end of the subclavian artery and the side of the pulmonary artery. A satisfactory thrill was present at the anastomotic site when all clamps were removed.

The postoperative course was uneventful. A loud, continuous anastomotic murmur was present. The left lung reexpanded normally, and there was no collection of fluid in the pleural space. The patient's color improved immediately after operation, and, by the time of discharge, on the 14th postoperative day, her mucous membranes were pink. Her exercise tolerance increased steadily. Four months after operation her red blood cell count was 4,300,000, and hemoglobin, 12 gm. She stated that she was leading a normal life and was able to walk to town daily, a distance of two miles.

On Feb. 5, 1951, seven months after operation, the patient announced that she had missed one menstrual period. The last menses had begun on Dec. 23, 1950, and the estimated date of confinement was Sept. 30, 1951. She was referred to the maternity clinic of the John Gaston Hospital, where the diagnosis of pregnancy was confirmed. Pelvic measurements were within normal limits. A routine blood test and urinalysis were normal, but the Rh factor was found to be negative. The antepartum course was entirely uncomplicated, and at no time did she complain of dyspnea or other symptoms of cardiovascular strain. Blocking antibodies were first detected in dilutions of 1 to 4 on April 6, 1951. By the time of delivery the titer had risen to 1: 128.

On Sept. 21, 1951, during the 39th week of pregnancy, the patient was admitted to the hospital because of rupture of the membranes. Labor began spontaneously, and, after five and one-half hours, she was delivered by low forceps of a female infant under continuous caudal anesthesia. The baby weighed 5 lb. 15 oz. (2,693.2 gm.) and presented no congenital abnormalities.

From the Department of Surgery and the Department of Obstetrics and Gynecology of the University of Tennessee College of Medicine.

1. Black-Schaffer, B.: Fetal Nanosomia and Bone Athrepsia in Newborn of Woman with Severe Cyanotic Cardiovascular Anomaly, Am. J. Obst. & Gynec. **59:** 656-661, 1950.

2. Talbot, J. E.: The Placental Infarct and Its Relation to the Etiology of Deformed Babies, Am. J. Obst. & Gynec. **8:** 271-288, 1924.

3. Ingalls, T. H.; Curley, F. J., and Prindle, R. A.: Anoxia as a Cau of Fetal Death and Congenital Defect in the Mouse, Am. J. Dis. C **80:** 34-45, 1950.

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A., and Taussig, H. B.: Surgical Treatment of Malformat in Which There Is Pulmonary Stenosis or Pulmonary A. **128:** 189-202 (May 19) 1945.

The initial blood studies revealed hemoglobin of 15 gm., 2 nucleated red blood cells per 100 white blood cells, and a 3+ reaction to the Coombs test. The blood type was B, and the baby was Rh positive. On the second postpartum day jaundice was detected, but the liver and spleen were not palpable. The hemoglobin never fell below 12 gm., and, in spite of the jaundice, the baby fed well and gained weight.

After an uneventful postpartum course, the mother and infant were discharged from the hospital on the eighth day. When seen in the obstetric clinic six weeks after delivery, the patient had no complaints, and the physical findings were normal. The infant required one blood transfusion during the third week following delivery and then remained well.

COMMENT

The French scientist Geoffroy-Saint-Hilaire,[7] in a work on anomalies published in 1837, described anencephaly as an acquired arrest of cranial development. In 1877, Camille Dareste [8] reported the artificial production of monstrosities, including anencephaly in the chick embryo, as a result of thermal insults to the embryonated egg. In Ingalls' [3] experiments on white mice, the anencephalic monsters, fetal deaths, and lesser anomalies were interpreted as differences determined by the severity, not the kind, of maternal illness. In Ingalls' work the maternal insult was in the form of anoxic anoxia.

In our case one can surmise that the low arterial oxygen saturation of the mother's blood interfered with fetal nutrition during the cephalic phase of development, with the result that two anencephalic infants were born, each at approximately six months' gestation. Following a Blalock operation upon the mother, a more normal level of arterial oxygen saturation was achieved. The patient was then able to carry on normal activities without dyspnea or the appearance of cyanosis. Pregnancy at this time went to full term, and the patient, in an uneventful delivery, gave birth to a viable infant who suffered mild erythroblastosis but showed no evidence of congenital anomalies.

424 Physicians and Surgeons Bldg. (Dr. Olim).

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[7] Geoffroy-Saint-Hilaire, I.: Histoire générale et particulière des anomalies de l'organisation chez l'homme et les animaux, Paris, J.-B. Baillière, 1837.

[8] Dareste, C.: Recherches sur la production artificielle des monstruosités ou essais de tératogénie expérimentale, Paris, C. Reinwald & Cie, 1877, p. 39.

Intestinal Obstruction.—The earliest roentgen sign of acute obstruction of the small intestine is a single loop of bowel distended with gas; this, with a clinical story of obstruction, in our opinion, gives the "green light" for immediate operation. A single loop obstruction is important from another aspect. It may mean that the blood supply to a segment of intestine is embarrassed if the normal anatomic markings are not clearly defined. The valvulae conniventes are present throughout the small intestine; they are more prominent in the upper part, being most pronounced in the jejunum. When gangrene occurs the bowel quickly loses tone and becomes edematous and blackened; its physiologic pattern rapidly disappears, and the bowel becomes a smooth-walled tube distended with gas. This is a pathognomonic roentgen sign of gangrene or embarrassment of blood supply. There is an additional sign of definite value in making the diagnosis of gangrene, a sign that has to do with the geometrical pattern of the intestine. Single or multiple "C-shaped" loops of small bowel arising from a common source or pedicle always indicate volvulus. This pattern is accompanied by loss of the valvulae conniventes, the extent of which is proportionate to the degree of embarrassment of the blood supply.—Ira H. Lockwood, M.D., Role of the Radiologist in Diagnosis and Management of Acute Obstruction of the Small Intestine, *The Journal of the International College of Surgeons*, May, 1952.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional preparations have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. Stormont, M.D., *Secretary.*

Diphtheria and Tetanus Toxoids-U.S.P. (See New and Nonofficial Remedies 1952, p. 388).

Eli Lilly & Company, Indianapolis

Combined Diphtheria-Tetanus: 1.5 cc. vials (one immunization) and 7.5 cc. vials (5 immunizations). Preserved with thimerosal 1:10,000.

Methyltestosterone-U.S.P. (See New and Nonofficial Remedies 1952, p. 368).

Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.

Tablets Methyltestosterone: 10 mg. and 25 mg.

Penicillin for Oral or Sublingual Administration (See New and Nonofficial Remedies 1952, p. 122).

Rexall Drug Company, Los Angeles

Tablets Potassium Penicillin G (Buffered): 100,000 units. Buffered with 0.25 gm. of calcium carbonate.

Propylthiouracil-U.S.P. (See New and Nonofficial Remedies 1952, p. 408).

Rexall Drug Company, Los Angeles

Tablets Propylthiouracil: 50 mg.

Vinbarbital Sodium (See New and Nonofficial Remedies, 1952, p. 248).

Sharp & Dohme, Inc., Glenolden, Pa.

Elixir Delvinal Sodium: 3.78 liter bottles. A 33% alcohol elixir containing 8.33 mg. of vinbarbital sodium in each cubic centimeter.

Powder Delvinal Sodium: 15 gm. bottles. U. S. Patents 2,119,526 (expires June 7, 1955), 2,150,154 (expires March 14, 1956), 2,187,701 (expires Jan. 16, 1957), 2,187,703 (expires Jan. 16, 1957), and 2,222,455 (expires Nov. 19, 1957). U. S. Trademark 363,168.

Isopropylarterenol Hydrochloride (See New and Nonofficial Remedies 1952, p. 182).

Chemo Puro Manufacturing Corporation, Long Island City, N. Y.

Powder Isopropylarterenol Hydrochloride: Bulk; for manufacturing use.

Isopropylarterenol Sulfate (See New and Nonofficial Remedies 1952, p. 184).

Chemo Puro Manufacturing Corporation, Long Island City, N. Y.

Powder Isopropylarterenol Sulfate: Bulk; for manufacturing use.

Penicillin for Injection for Prompt Action (See New and Nonofficial Remedies 1952, p. 124).

Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.

Potassium Penicillin G: 2,000,000 and 5,000,000 units in 20 cc. vials.

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SURGERY OF THE ADRENAL CORTEX

Surgery of the adrenal cortex is undergoing a rapid evolution, made possible by an increasing understanding during the past 30 years of the functions of the adrenal gland. The availability of adrenal cortical extracts and, more recently, cortisone, has reduced the danger of postoperative adrenal cortical insufficiency and has made feasible a wider application of adrenal surgery. However, many questions remain to be answered, and adrenal surgery is not to be undertaken lightly.

The major developments that have occurred in this field relate to diagnostic procedures for the assay of adrenal function, improved surgical technique, and methods of maintaining life in the presence of adrenal insufficiency or absence of the adrenal glands.

At least 28 steroids have been isolated from the adrenal cortex and their structures determined. The most important of these are desoxycorticosterone (DCA) and compounds A (11-dehydrocorticosterone), B (corticosterone), E (11-dehydro-17-hydroxycorticosterone), and F (17-hydroxycorticosterone). The physiological activity of the adrenal steroids in animals and in man is being intensively studied. It has become apparent that no single syndrome is characteristic of adrenal cortical overactivity. Rather, the clinical picture is variable and depends on the type and quantity of steroid hormones produced, age and sex of the patient, and, possibly, other factors. By estimating the activities of the adrenal steroids from a study of the hormone metabolites in the urine, it is now possible to differentiate with reasonable certainty between the causes of adrenal cortical dysfunction before surgery.

The availability of natural adrenal steroids and synthetic cortisone in larger quantities has brought within the scope of surgery cases of Cushing's syndrome without an adrenal tumor. Also, these substances administered preoperatively and postoperatively have greatly reduced the risk of adrenal insufficiency due to adrenalectomy performed for other causes.

Walters[1] recently reviewed developments in surgical technique at the Mayo Clinic. He had noted that a consistent feature of cases of functioning adrenal tumor is an atrophy of the gland on the opposite side. Therefore when an adrenal tumor is removed Walters leaves the opposite gland intact, whereas for hyperplasia he performs a bilateral subtotal adrenalectomy. The first step in the operative treatment of the hyperfunctioning adrenal gland, therefore, is to determine which is present, a tumor or hyperplasia. Previously Walters and his colleagues explored both glands before resecting either. They now base the procedure on the appearance of the first gland exposed. If it appears to be atrophic they explore the other gland with the probability of finding a tumor. If the first adrenal gland looks normal, 90% of it is resected without looking at the other adrenal gland. In patients with general hyperplasia but no tumor a total adrenalectomy is done several weeks later on the opposite side. Walters now does the second procedure without preliminary exposure of the remnant of the first gland to determine its viability. However, those less experienced would wish to check the viability of the remnant of the first gland before resecting the other.

Walters[1] recalls that, as a result of extensive studies, Kepler in 1934 had concluded that in "pituitary basophilism" the dominant part probably was taken by the adrenal gland even in cases in which basophilic tumors of the hypophysis were present. This led to Kepler's suggestion that, in cases of Cushing's syndrome without adrenal cortical tumor, bilateral adrenal resection be done. Walters in 1934 did such a resection, removing half of each adrenal gland. The results were not impressive. In 1951 Priestley, Walters, and their colleagues[2] reported the results of subtotal adrenalectomy for Cushing's syndrome in 29 patients in whom surgical exploration did not reveal a tumor. Six of the 29 patients died. These deaths all occurred prior to the use of cortisone in both preoperative and postoperative management. Four of the deaths occurred in the first 10 cases. Nineteen patients obtained an excellent remission, but three had recurrences of Cushing's syndrome. It is too early to draw final conclusions but the results to date are encouraging.

Based on observations of changes in blood pressure in Addison's disease (hypotension) and certain adrenal tumors (hypertension), adrenalectomy has been applied in certain cases of hypertension. Neuhof[3] observed a distinct reduction in blood pressure with relief of symptoms following bilateral partial adrenalectomy combined with sympathectomy in 13 patients with severe hypertension. Green and his group[4] reported the first case of total adrenalectomy adequately treated for malignant hypertension. Other studies in progress with hypertension are giving interesting results. An evaluation of these procedures in hypertension, however, is not yet possible.

The first successful total adrenalectomy in man was performed at the University of Chicago in 1945 for metastatic cancer of the prostate in a man who was in relapse following antiandrogenic therapy.[5] The rationale for total adrenalectomy in such cases is based on the fact that the adrenal cortex probably elaborates androgens in significant amounts. Several other cases of patients with prostatic carcinoma subjected to partial or total bilateral adrenalectomy have been reported. Although the remissions that have been obtained are encouraging, further observations with adrenalectomy in metastatic cancer of the prostate are required.

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[1] Walters, W.: Surgical Treatment of Hyperfunctioning Lesions of the Adrenal Cortex, Lancet **1**: 221, 1952.

[2] Priestley, J. T.; Sprague, R. G.; Walters, W., and Salassa, R. M.: Subtotal Adrenalectomy for Cushing's Syndrome: Preliminary Report of 29 Cases, Ann. Surg. **134**: 464, 1951.

[3] Neuhof, H.: Gangliosympathectomy and Bilateral Hemiadrenalectomy for Severest Grade of Hypertension, Ann. Surg. **128**: 787, 1948.

[4] Green, D. M.; Nelson, J. N.; Dodds, G. A., and Smalley, R. E.: Bilateral Adrenalectomy in Malignant Hypertension and Diabetes, J. A. M. A. **144**: 439 (Oct. 7) 1950.

[5] Huggins, C., and Scott, W. W.: Bilateral Adrenalectomy in Prostatic Cancer: Clinical Features and Urinary Excretion of 17-Ketosteroids and Estrogen, Ann. Surg. **122**: 1031, 1945.

In conclusion, the removal of functioning adrenal tumors gives excellent results. The removal of nonmalignant adrenal glands is, however, still in the investigative phase. Conditions that have been benefited by adrenalectomy when no adrenal tumor was present are Cushing's syndrome, certain types of hypertension, and prostatic cancer.

Although it is now possible to prevent and sometimes to overcome adrenal insufficiency, the disadvantages of adrenalectomy, such as the possible development of Addison's disease and the necessity for long-continued hormonal replacement therapy, must be weighed against the possible benefits before adrenal surgery is undertaken.

OSTEITIS PUBIS

The first description of osteitis pubis, apparently a new clinical entity, was given by Edwin Beer in 1924. Beer's description has undergone little modification in recent papers. Muschat,[1] in 1945, reported 2 cases and found in the literature of the previous two decades only 23 cases. Cohen [2] reported on two cases in 1946 and was able to cull from literature a total of 33. Goldstein and Rubin [3] reported on 10 cases in 1947. Rosenberg and Vest,[4] in 1948, observed two cases occurring after a suprapubic prostatectomy and two after a transurethral resection. Beach [5] reported 7 cases in 1949, and Leucutia [6] reported on 4 cases of his own in 1951 and culled 116 cases from the existing literature. Of these cases, 83 fall in the short period since 1947. As a result of a questionnaire addressed by Mortensen [7] to his urologic colleagues in Australia and New Zealand 44 cases of osteitis pubis were reported; 7 were from his own practice. Lavalle and Hamm,[8] in the United States, reported four cases in 1951 and Marshall [9] three in 1952.

Osteitis pubis appears to occur only after surgical intervention on the lower urinary tract, most frequently after a suprapubic or retropubic prostatectomy and occasionally after a transurethral resection. The clinical course of this complication is quite characteristic. About three to eight weeks after a recovery from the operation, the patient experiences a sudden severe pain over the symphysis pubis, usually more pronounced on one side. Within a few hours or days the pain spreads down the rami and the ischia. The pain is now excruciating and is aggravated by spasms of the adductor muscles of the thigh provoked by the slightest movement. There may be discomfort and pain on defecation and urination. The temperature is only moderately elevated and may be normal at the peak of the disease.

About three weeks after the onset of pain roentgenograms show a fraying of periosteum and later a wooly or moth-eaten rarefaction of the affected portions of the bone. The destructive process is characterized by decalcification, which, however, does not lead to formation of sequestrums. The lytic process is accompanied by evidence of recalcification leading to a complete reossification and a complete restitution to normal, except for a somewhat sclerosed and narrowed symphysis.

Two theories attempt to explain the pathological etiology of osteitis pubis: the theory of aseptic necrosis of the type of Sudeck's atrophy and the inflammatory infectious theory. Cohen [2] stressed that, while clinically the condition simulated an infection, roentgenologically it simulated bone atrophy, as suggested by the absence of sequestrums, involucrum, or extensive sclerosis. The theory received support from Wheeler's animal experiments.[9a] He had failed to reproduce the disease in rabbits in whom he traumatized the space of Retzius, the periosteum, and the pubis and then introduced urine, cultures of bacteria, and foreign bodies under the periosteum. Sudeck's atrophy of bone is believed to be due to interference with the nerve supply to the blood vessels of the part, producing gross hyperemia and a consequent washing out of the calcium of the bones.

The infectious theory presupposed trauma to the periosteum of the os pubis or to its nutrient vessels and infection of the traumatized tissue. Beach [5] insisted that the condition is contingent on accumulation of urine or septic material behind the pubes, overspreading the nutrient foramina. The important factor was the injury to the prostatic capsule with septic spill.

Lavalle and Hamm [8] performed a biopsy on three patients with roentgenologically demonstrated osteitis pubis and an autopsy on a man with osteitis pubis who died 18 months later of another disease. Pseudomonas aeruginosa was cultivated from all the biopsy specimens. Histological examination of tissue revealed a subacute chronic inflammation involving the periosteum, bone, and cartilage. There were plasma cells and eosinophils in large numbers. The process suggested an infection of low virulence and of long standing. These authors concluded that osteitis pubis is a true inflammatory disease and not a sterile necrosis of bone as in Sudeck's atrophy.

Osteitis pubis is a self-limited disease with a favorable prognosis. A more or less complete cure takes place in from two months to as long as two years. Physiotherapy, immobilization, sulfonamides, and antibiotics are of little or no value. Goldstein and Rubin [3] and Leucutia [6] state that deep x-ray therapy is beneficial, though others deny this. Marshall and his co-workers [9] reported a dramatically prompt effect from corticotropin therapy and a limited effect in one chronic complicated case.

It is apparent from the review of literature that osteitis pubis is an increasingly common complication of operations on the lower urinary tract. The pathological etiology of the complication demands further study.

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1. Muschat, M.: Osteitis Pubis Following Prostatectomy, J. Urol. **54**: 447-458 (Nov.) 1945.
2. Cohen, H. H.: Osteitis Pubis, J. Urol. **55**: 84-88 (Jan.) 1946.
3. Goldstein, A. E., and Rubin, S. W.: Osteitis Pubis Following Suprapubic Prostatectomy: Results with Deep Roentgen Therapy, Am. J. Surg. **74**: 480-487 (Oct.) 1947.
4. Rosenberg, M. L., and Vest, S. A.: Osteitis Pubis, J. Urol. **60**: 767-775 (Nov.) 1948.
5. Beach, E. W.: Osteitis Pubis: A Urologic and Roentgenographic Study, Urol. & Cutan. Rev. **53**: 577-584 (Oct.) 1949.
6. Leucutia, T.: Osteitis Pubis and Its Treatment by Roentgen Irradiation, Am. J. Roentgenol. **66**: 385-404 (Sept.) 1951.
7. Mortensen, H.: Osteitis Pubis, J. Urol. **66**: 412-417 (Sept.) 1951.
8. Lavalle, L. L., and Hamm, F. C.: Osteitis Pubis: Its Etiology and Pathology, J. Urol. **66**: 418-423 (Sept.) 1951.
9. Marshall, V. F., and others: Osteitis Pubis Treated with Adrenocorticotrophic Hormone, J. Urol. **67**: 364-369 (March) 1952.

9a. Wheeler, W. K.: Periostitis Pubes, J. Urol. **45**: 467 (March) 1941.

ORGANIZATION SECTION

FEDERAL MEDICAL LEGISLATION

Federal Board of Hospitalization

Senator O'Conor of Maryland introduced S. 3314, which would establish a federal Board of Hospitalization, composed of 10 members. The President would appoint four members from private life who are persons learned in the medical arts. The other six members would be the Secretaries of Defense and Interior, the Veterans' Affairs and General Services administrators, the Director of the Bureau of the Budget, and the Surgeon General of the Public Health Service. It would be the duty of the board to make recommendations to the President respecting improvements in and better utilization of federal hospital facilities and personnel. They would seek to prevent overlapping and duplication of services and over-building of facilities. Such questions as need for existing or additional facilities and their location would also be fields in which recommendations would be made. The board would promulgate rules and regulations for efficient utilization of physicians, nurses, and related personnel for all federal facilities, except that such rules would not interfere with the established policies and practices of the Veterans Administration in the operation of VA facilities nor involve transfer of medical and hospital personnel from such agency unless such transfer has been approved by the reference committees of the Senate and House. This bill was introduced as a substitute for S. 1140, which proposed the creation of a federal Department of Health.

Federal Aid to Nurse Education

H. R. 8087, introduced by Congresswoman Bolton of Ohio, proposes to provide a program of emergency grants and scholarships for education in the field of nursing. Mrs. Bolton introduced this bill to replace her former bill, H. R. 910, on the same subject, which was reported unfavorably by the House Committee on Interstate and Foreign Commerce. The provisions of this measure limit the program to three years and place the control of the program in state boards of nurse examiners. Any state wishing to receive federal funds would submit a state plan, and, provided it met with certain minimum standards, it would be approved by the Surgeon General of the Public Health Service. Federal funds need not be matched by the states and would be used to assist schools of nursing in increasing enrollment of students and to meet the cost of improving and expanding their curriculums and to enlarge their staffs. Scholarship stipends would be awarded by the designated state agency and could cover cost of tuition, books, uniforms, equipment, and such amount for maintenance as set by the state agency. The bill would authorize 5 million dollars for the first year, 10 million for the second, and 15 million for the third and would be distributed among the states in the proportion that each state's newly enrolled trainees bear to the total national figure. There is no provision that would assist the states in construction of new schools or enlargement of those in existence, such as was contained in H. R. 910.

A second section of the bill provides federal assistance for a program of vocational education in practical nursing similar to the provision of H. R. 910. While no specific authorization for appropriations is provided, this section calls for a minimum allotment of $10,000 to each state. This program, at the federal level, is placed under the Commissioner of Education of the Federal Security Agency. At the state level State Boards of Vocational Education would direct the program.

Medical Expense Deductions from Income Tax

Representative Clemente of New York introduced H. R. 8148, which would increase the amount of deduction allowed, for income tax purposes, for medical and dental expenses. The present Internal Revenue laws provide that deduction may be made for medical expenses that exceed 5% of adjusted gross income. This bill would seek to increase such allowable deductions by removing any reference to the 5%, thus permitting taxpayers to begin deductions with the first dollar of medical expense each taxable year.

REGISTRATION AT THE ANNUAL SESSION, CHICAGO, JUNE 9-13, 1952

Alabama	78	Montana	30
Alaska	1	Nebraska	138
Arizona	45	Nevada	3
Arkansas	30	New Hampshire	12
California	551	New Jersey	134
Canal Zone	2	New Mexico	15
Colorado	101	New York	588
Connecticut	58	North Carolina	47
Delaware	12	North Dakota	31
District of Columbia	185	Ohio	467
Florida	131	Oklahoma	75
Georgia	67	Oregon	62
Hawaii	19	Pennsylvania	364
Idaho	18	Puerto Rico	7
Illinois	1,641	Rhode Island	19
Chicago	2,833	South Carolina	38
Indiana	594	South Dakota	48
Iowa	242	Tennessee	116
Kansas	75	Texas	237
Kentucky	117	Utah	37
Louisiana	78	Vermont	4
Maine	7	Virginia	70
Maryland	104	Washington	110
Massachusetts	150	West Virginia	53
Michigan	514	Wisconsin	584
Minnesota	229	Wyoming	11
Mississippi	34		
Missouri	269	Total	11,485

OTHER COUNTRIES

Africa	2	Israel	7
Argentine	4	Italy	2
Australia	2	Japan	2
Bahamas	1	Mexico	13
Belgium	4	New Brunswick	1
Brazil	6	New Zealand	1
Canada	70	Norway	1
Chile	1	Nova Scotia	2
China	2	Pakistan	5
Colombia	4	Peru	5
Cuba	34	Philippines	4
Denmark	2	Scotland	1
England	11	Siam	5
Finland	1	Sweden	6
Formosa	1	Switzerland	1
France	4	Uruguay	2
Germany	4	Venezuela	2
Greece	6	Total	231
Guatemala	5		11,485
Holland	2		231
India	2		
Iran	2		
Ireland	1	Grand Total	11,716

REGISTRATION BY SECTIONS

Anesthesiology	241
Dermatology & Syphilology	244
Diseases of the Chest	327
Experimental Medicine & Therapeutics	71
Gastro-Enterology & Proctology	245
General Practice	2,399
Internal Medicine	1,793
Laryngology, Otology & Rhinology	235
Military Medicine	62
Nervous & Mental Diseases	399
Obstetrics & Gynecology	728
Ophthalmology	365
Orthopedic Surgery	268
Pathology & Physiology	213
Pediatrics	356
Physical Medicine & Rehabilitation	93
Preventive & Internal Medicine & Public Health	284
Radiology	373
Surgery, General & Abdominal	1,511
Urology	240
Session on Allergy	60
More than one Section checked	157
No Section checked	1,052
Total	11,716

The summary of federal legislation was prepared by the Washington Office of the American Medical Association.

PROCEEDINGS OF THE CHICAGO SESSION

ABSTRACT OF PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT THE ANNUAL SESSION IN CHICAGO, ILL., JUNE 9-13, 1952

(Continued from page 875)

Resolution on Negro Physicians in North Carolina

Dr. Millard D. Hill, North Carolina, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The members of the Medical Society of the State of North Carolina are anxious to maintain the cordial relations existing between the white and Negro physicians in North Carolina; and

WHEREAS, They recognize the advantages to the Negro physicians of membership in the American Medical Association; and

WHEREAS, At present it is not feasible, because of limits of space in the hotels of North Carolina, and also because of existing custom, to attempt to have joint meetings of both groups; and

WHEREAS, The Old North State Medical Society, which for fifty-three years has been the state organization of Negro physicians, has asked to be admitted "as a constituent association of the American Medical Association"; and

WHEREAS, The House of Delegates of the Medical Society of the State of North Carolina, at its annual meeting in May 1951, voted to approve this request and sponsor the Old North State Medical Society as a constituent of the American Medical Association; therefore be it

Resolved, That the House of Delegates of the American Medical Association approve the recognition of the Old North State Medical Society as an affiliate of the Medical Society of the State of North Carolina, and also of the American Medical Association.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee feels that great progress has been made in the assimilation of Negro doctors into organized medicine and many societies have adopted a policy of inviting Negro doctors to attend their scientific meetings with commendable success. Due to a question of constitutionality and to the fact that the Old North State Medical Society is composed of physicians, dentists and pharmacists, we recommend that the resolution be referred to the Board of Trustees.

Resolutions on Outstanding Action by Dr. Walter H. Roehll

Dr. William Weston, South Carolina, introduced the following resolutions, which were reported on by the Reference Committee on Hygiene and Public Health:

WHEREAS, Dr. Walter H. Roehll was a passenger on a train which was stalled for several days in a heavy snowstorm in the Sierras; and

WHEREAS, Dr. Roehll showed untiring zeal far beyond the call of duty in administering to those of his fellow passengers who needed medical care; and

WHEREAS, Dr. Roehll's actions were widely disseminated in the public press but have never been acknowledged by his professional colleagues; therefore be it

Resolved, That this House of Delegates express its appreciation and approval of Dr. Roehll's service and also its desire that this sentiment be noted in the official record; and be it further

Resolved, That a copy of this resolution be sent by the Secretary to Dr. Roehll and to the officials of the Southern Pacific Railroad.

REPORT OF REFERENCE COMMITTEE ON HYGIENE AND PUBLIC HEALTH

Dr. William F. Costello, Chairman, presented the following report, which, after discussion, was adopted:

With respect to the resolutions in regard to Dr. Roehll, your reference committee recommends their adoption.

Resolutions on Permanent Records of Judicial Council

Dr. A. C. Scott, Texas, introduced the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The Judicial Council of the American Medical Association is the court of last resort in all matters of medical ethics and rules, the actions taken by this Council are vitally important to all members of the Association as well as to the constituent societies; and

WHEREAS, Rulings, actions and interpretations of the Judicial Council are so important for purposes of guidance that they should be available for study by county and state societies; and

WHEREAS, Permanent records of these actions should be maintained in the office of the Secretary of the American Medical Association; therefore be it

Resolved, That the House of Delegates request the Board of Trustees to take the necessary action to see that permanent bound records of all actions of the Judicial Council be maintained in the office of the Secretary of the American Medical Association for guidance of constituent societies seeking precedence and interpretation; and be it further

Resolved, That such rulings and interpretations of the Judicial Council as would be helpful to the membership of the American Medical Association at large be made available to them through THE JOURNAL of the American Medical Association at the discretion of the Editor.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee recommends approval of the resolutions as presented.

Resolution on Badges for Alternate Delegates

Dr. Hoyt B. Woolley, Idaho, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Alternate delegates to the American Medical Association are not provided a distinguishing badge; and

WHEREAS, The absence of a badge makes identification difficult; and

WHEREAS, Many of the alternate delegates come great distances to attend the American Medical Association; now therefore be it

Resolved, That the House of Delegates request the Board of Trustees of the American Medical Association to provide suitable identification badges for the alternate delegates to the American Medical Association.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee recommends approval of this resolution as presented.

Resolution on Reevaluation of Principles of Medical Ethics

Dr. George Turner, Texas, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, There are wide differences of opinion among the members and constituent societies concerning interpretation of the present statement of the Principles of Medical Ethics; and

WHEREAS, It is desirable that the Principles of Medical Ethics be studied and reevaluated in order to clarify misunderstandings among members of the Association; and

WHEREAS, The Council on Constitution and By-Laws is the proper Council to consider changes in the Constitution and By-Laws governing the membership and operation of this Association; and

WHEREAS, It is felt that the Principles of Medical Ethics should be given the same careful consideration by this Council that it gives to changes in the Constitution and By-Laws; therefore be it

Resolved, That the House of Delegates request the Council on Constitution and By-Laws to study and evaluate the present Principles of Medical Ethics and report back to the House of Delegates its recommendations.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, submitted the following report, which was adopted:

Your committee recommends that the House of Delegates request the Council on Constitution and By-Laws to study and evaluate the present Principles of Medical Ethics and report back to the House of Delegates its recommendations.

Resolutions on International Labor Organization Attempt to Socialize Medicine

Dr. J. Stanley Kenney, New York, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

Whereas, The International Labor Organization composed of representatives of government, management and labor, in June, 1952, is expected to consider "Minimum Standards of Social Security" including medical care; and

Whereas, It is expected that an "Expert Committee on Medical Care in Social Security," appointed by the World Health Organization, which committee does not contain any practicing physician and is believed to have made no attempt to obtain opinions of the practicing medical profession and which it is expected will recommend full time salaried medical service in the countries which are members of the International Labor Organization; and

Whereas, A "convention," having the status of an international treaty is expected to recommend this type of medical practice through the President of the United States of America to the Senate; and

Whereas, Adoption of such a scheme would consign the United States of America to full time salaried medical service for all of its people, in other words, socialized medicine; now therefore be it

Resolved, That this House of Delegates of the American Medical Association disapproves of full time salaried governmental medical service for the people of the United States of America; and be it further

Resolved, That the Secretary of the American Medical Association is hereby instructed to transmit a copy of this resolution to the President and members of the Senate of the United States of America; and also be it further

Resolved, That the Board of Trustees of the American Medical Association is hereby instructed actively to oppose this expected attempt to socialize medical practice in our country.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted:

The resolutions introduced by Dr. J. Stanley Kenney on behalf of the Medical Society of the State of New York, condemning the attempt of the International Labor Organization to socialize medicine by means of an "international convention," are, in the opinion of your committee, both timely and vital, and we recommend their adoption.

Resolution on Restriction of Membership in the American Medical Association

Dr. H. H. Bauckus, New York, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

Whereas, In 1950 the House of Delegates of the American Medical Association passed the following resolution:

> "Whereas, This House of Delegates recognizes that certain constituent and component societies of the American Medical Association have had or now have restrictive provisions as to qualifications of membership based on race and that this question is of deep concern to many interested parties; and
>
> "Whereas, It is the policy of the American Medical Association to broaden the scope of educational facilities and raise the ethical levels of practice of all physicians in order to improve the quality of medical care for the American people; therefore be it
>
> "*Resolved,* That these facts be brought to the attention of all component and constituent societies, appreciating that membership is a component and constituent society responsibility; and be it further
>
> "*Resolved,* That constituent and component societies having restrictive membership provisions based on race study this question in the light of prevailing conditions with a view to taking such steps as they may elect to eliminate such restrictive provisions"; and

Whereas, Distinctly encouraging progress has been noted in the favorable policy toward admission of Negro physicians to membership in county medical societies in Maryland, Missouri, Florida, District of Columbia, Oklahoma, Virginia, and Delaware; and

Whereas, Study and partial adoption of this policy are now under way in North Carolina, South Carolina, Tennessee, Texas, Kentucky, and Arkansas; therefore be it

Resolved, That this House of Delegates of the American Medical Association in June, 1952, reiterate its above-quoted resolution of 1950 and request the Secretary of the American Medical Association to send a copy of this resolution to each constituent association and society, to the end that all men and women professionally qualified shall be eligible for membership in the American Medical Association and its component and constituent associations and societies without regard to race, color or creed.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee notes that since the action of the House of Delegates at the 1950 meeting in San Francisco, laudable progress has been made removing restrictions on membership in many county and state societies. Your committee is encouraged by this report of progress as expressed to it in its deliberations. Your committee recommends approval of this resolution

Resolutions on Reed-Keogh Bills

Dr. W. P. Anderton, New York, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

Whereas, The House of Representatives of the United States has been considering H.R. 4371 and H.R. 4373, known as the Reed-Keogh bills; and

Whereas, These bills would enable citizens of the United States of America practicing in the professions and certain others who are self-employed to provide for old age through the establishment of retirement plans as accepted in industry; now therefore be it

Resolved, That the Trustees of the American Medical Association are hereby commended for their efforts to obtain passage of such legislation; and be it further

Resolved, That the Board of Trustees is hereby importuned to continue these efforts through every avenue at its disposal.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted:

The resolutions introduced by Dr. W. P. Anderton regarding the Reed-Keogh bills were given due consideration. Your committee heartily approves of the resolutions and recommends their adoption.

Resolutions on Appointment of Health Commission of the American Medical Association

Dr. Russel V. Lee, Section on Military Medicine, introduced the following resolutions, which were referred to the Reference Committee on Insurance and Medical Service:

Whereas, To implement more completely the primary objective of the American Medical Association, which is properly the advancement of the state of health of the Nation and of humanity; and

Whereas, To establish effective liaison with others who are also vitally interested in this matter; therefore be it

Resolved, That the House of Delegates of the American Medical Association hereby authorize and request the Board of Trustees of the American Medical Association to constitute a body to be known as the Health Commission of the American Medical Association; and be it further

Resolved, That this body shall consist of physicians representing general practice, the principal specialties, group practice, medical education, research, together with invited lay representatives of the general public, of big and little business, of organized and unorganized labor, of farmers, educators and such others and to such numbers as the Board of Trustees deems appropriate; and be it further

Resolved, That the functions of this commission shall be to study and make recommendations on all matters that affect the health care of individuals and groups, but particularly such sociological and economic problems as have relevance to health matters, to hold such meetings and public hearings as it finds useful, to establish subcommittees and special study groups when needed, and to submit a report, if possible with recommendations, each year to the House of Delegates of the American Medical Association; and be it further

Resolved, That this commission be furnished with such funds as the Board of Trustees finds necessary and feasible and furthermore be authorized to receive additional funds from individuals, corporations and charitable foundations, if such funds are offered under conditions which impose no restriction on the work of the Commission.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. W. D. Stovall, Chairman, presented the following report, which was adopted:

At the present time the American Medical Association is already engaged in many of the activities that are contemplated in this resolution. In order that there be an integration of these services with other studies and those that may be recommended, and because of the amount of money that would be required to implement this body, this resolution is referred to the Board of Trustees.

Resolutions on Specialty Board for Microbiology

The following nine resolutions dealing with the same subject were introduced by (1) Drs. William F. Costello, New Jersey, (2) Val H. Fuchs, Louisiana, (3) Karl S. J. Hohlen, Nebraska, (4) John P. Culpepper, Mississippi, (5) Charles L. Farrell, Rhode Island, (6) Eugene F. Hoffman, California, (7) Carlton E. Wertz, New York, (8) M. G. Westmoreland, Section on Pathology and Physiology, and (9) Harlan English for the Illinois delegation, respectively, and were referred to the Reference Committee on Medical Education and Hospitals:

(1) Resolutions on Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a Medical School approved by the Council on Medical Education and Hospitals and must be licensed to practice Medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval in order to safeguard the interests and welfare of patients; and be it further

Resolved, That the delegates of the Medical Society of New Jersey to the American Medical Association be instructed to place these resolutions before the June, 1952, session of the House of Delegates of the American Medical Association.

(2) Resolutions on Medical Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Medical Specialty Board in Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology, which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates of the American Medical Association instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of patients.

(3) Resolutions on Limitation of Approval of Specialty Boards

WHEREAS, There is a movement to have the Council on Medical Education and Hospitals approve a specialty board composed in part of nonphysicians and designed to certify nonphysicians in certain branches of laboratory medicine; and

WHEREAS, The American Medical Association is in concept and practice entirely a medical body for the betterment of medical practice; and

WHEREAS, The approval of a nonphysician specialty board would be contrary to the interest and intent of the American Medical Association; therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, which include the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials; and be it further

Resolved, That the delegates of the Nebraska State Medical Association to the American Medical Association be instructed to place these resolutions before the June, 1952, session of the House of Delegates of the American Medical Association, and that the delegates be instructed to vote against any modification of the qualifications for specialty certification which would include nonphysicians if such modifications are introduced to the House of Delegates of the American Medical Association.

(4) Resolutions on Specialty Board in Medical Microbiology

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology, which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates of the American Medical Association instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with those essentials, in order to safeguard the interests and welfare of patients.

(5) Resolutions on Approval of Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology, which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the *Essentials for Approved Examining Boards in Medical Specialties*, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of patients.

(6) Resolutions on Medical Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Medical Specialty Board of Microbiology which would certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology which can provide certification of properly qualified physicians in the field of medical microbiology; therefore be it

Resolved, That the House of Delegates of the American Medical Association affirm its approval of the previously established Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination for regular certification must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the members of any medical specialty board be graduates of a medical school approved by the Council on Medical Education and Hospitals; and be it further

Resolved, That the Council on Medical Education and Hospitals of the American Medical Association limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of the public.

(7) Resolutions on Specialty Boards

WHEREAS, There is a movement to have the Council on Medical Education and Hospitals approve a specialty board composed in part of nonphysicians and designed to certify nonphysicians in certain branches of laboratory medicine; and

WHEREAS, The American Medical Association is in concept and practice entirely a medical body for the betterment of medical practice; and

WHEREAS, The approval of a nonphysician specialty board would be contrary to the interest and intent of the American Medical Association; therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, which include the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials; and be it further

Resolved, That the delegates of the Medical Society of the State of New York to the American Medical Association be instructed to place these resolutions before the June, 1952 session of the House of Delegates of the American Medical Association.

(8) Resolutions on Limitation of Approval of Specialty Boards

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of patients.

(9) Resolutions on Specialty Board Approval

WHEREAS, An application is presently being processed with the intent of obtaining American Medical Association approval of a Specialty Board in Medical Microbiology which will certify nonphysicians as diplomates in a field of medical practice; and

WHEREAS, There is already in existence an American Board of Pathology, which can provide certification of properly qualified physicians in the field of medical microbiology; now therefore be it

Resolved, That the House of Delegates of the American Medical Association reaffirm its approval of the Essentials for Approved Examining Boards in Medical Specialties, including the principles that applicants for examination must be graduates of a medical school approved by the Council on Medical Education and Hospitals, and must be licensed to practice medicine; and be it further

Resolved, That the House of Delegates of the American Medical Association instruct the Council on Medical Education and Hospitals to limit its approval of specialty boards to those which can comply with these essentials, in order to safeguard the interests and welfare of patients; and be it further

Resolved, That the delegates of the Illinois State Medical Society to the American Medical Association be instructed to place these resolutions before the June, 1952, session of the House of Delegates of the American Medical Association.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. Edgar V. Allen, Chairman, presented the following report, which was adopted:

Resolutions Introduced by Dr. W. F. Costello, New Jersey, V. H. Fuchs, Louisiana, K. S. J. Hohlen, Nebraska, J. P. Culpepper, Mississippi, C. L. Farrell, Rhode Island, E. F. Hoffman, California, C. E. Wertz, New York, M. G. Westmoreland, Section on Pathology and Physiology, Harlan English, Illinois: Since the intent of these nine resolutions are essentially the same, the opposition to the formation of an American Board of Medical Microbiology, they will be considered together. The subject matter in the various resolutions is that the Council on Medical Education and Hospitals be instructed by the House of Delegates to limit its approval of specialty boards to those which can comply with the qualifications contained in the report of the Council on Medical Education and Hospitals entitled "Essentials for Approved Examining Boards in Medical Specialties" revised to Sept. 1, 1949.

These qualifications are briefly: (1) License to practice medicine in a state, territory or possession of the United States; (2) Graduate of an approved medical school in the United States or Canada, and (3) Special training in the particular special field.

It must be clearly understood that on any new matters, action or recommendation by the Council on Medical Education and Hospitals, which is a committee of the House of Delegates, must be submitted to the House of Delegates for its approval before being adopted. The Council on Medical Education and Hospitals has no power to initiate any policy regarding specialty boards contrary to any regulation previously adopted by the House of Delegates.

In the special report submitted to the House June 9, 1952, the Council on Medical Education and Hospitals recommends a study of the relationship of American medicine to professional nonmedical groups by the Council and the Board of Trustees. The Council further states that the recommendations of this study (the word "recommendations" being changed by your committee to "report") shall be presented to the House of Delegates for any action it may decide to take. Until that time the Council on Medical Education and Hospitals shall not approve or consider for approval the establishment of any new American Board which would involve the certification of other than doctors of medicine.

In the eight resolutions introduced by physicians from state medical societies in widely scattered areas of the country and one from the Section on Pathology and Physiology, they have stated in no uncertain manner how they feel about the subject, and your reference committee is confident that the Board of Trustees, the Council on Medical Education and Hospitals and the Advisory Board for Medical Specialties will give due consideration to the subject matter contained in these resolutions.

The Council on Medical Education and Hospitals has not recommended the approval of an American Board for any nonphysician group, and hence your reference committee feels it is unnecessary to take any action on these resolutions at this time but should await the report to the House of Delegates of the study of the Council on Medical Education and Hospitals and the Board of Trustees on the subject.

Resolution on Rate of Compensation for A. M. A. Dues Billing and Collection

Dr. William F. Costello, New Jersey, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, For the work entailed in the collection and recording of American Medical Association membership dues, the Medical Society of New Jersey presently is compensated at the rate of one per cent (1%) of the total monies involved; and

WHEREAS, The cost to the Medical Society of New Jersey for this work approximates three and one-half to four per cent (3½%-4%) of the total monies involved; therefore be it

Resolved, That the Medical Society of New Jersey respectfully requests that the American Medical Association make an equitable upward revision of the rate of compensation for the work of dues collection or release the Medical Society of New Jersey from the obligation of further collection of dues for the national organization.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee requests the Board of Trustees to restudy the method and amount of compensation paid to state societies for the collection of American Medical Association dues after consultation and conference with the organization of secretaries and officers of state societies.

Resolution on Armed Forces Dependents' Medical Care

Dr. Jesse D. Hamer, Arizona, presented the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

WHEREAS, Dependents of members of the armed forces at times need medical care under circumstances that involve financial hardships, lack of adequate governmental facilities, or both; and

WHEREAS, The physicians of the United States through their sponsored prepayment plans are able to provide medical care to such dependents on a service basis; and

WHEREAS, Many citizens entering military service already have protected their dependents against costs of illness through voluntary insurance; and

WHEREAS, Blue Shield and other medically sponsored plans enable their members to receive high quality medical care with free choice of physician; and

WHEREAS, Labor and industry generally have recognized that medical insurance benefits for dependents are important in developing better employee morale; now therefore be it

Resolved, By the House of Delegates of the Arizona Medical Association, Inc., that, if in the independent judgment of the Department of Defense or Congress, the welfare of our preparedness program requires that dependents of members of our armed forces receive medical care on a service basis, then the medical profession stands ready to provide such service through Blue Shield and other medical society sponsored plans, provided that the payments of all or part of the dues are made by the individuals who become members of the plan.

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. Joseph H. Howard, Chairman, submitted the following report, which was adopted:

Dr. Jesse D. Hamer, delegate from Arizona, presented a resolution the subject of which was "Armed Forces Dependents' Medical Care." No one appeared before the committee to explain or discuss this resolution, and the committee was a bit confused concerning the intent of the resolution; therefore no action was taken.

Resolutions on Medical and Hospital Benefits to Veterans

Dr. Jesse D. Hamer, Arizona, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, Certain veterans hospitals have expressed a definite public policy of accepting non-service-connected disability cases among veterans; and

WHEREAS, In accepting such cases the policy has been expressed of accepting hospital benefits from commercial insurance companies; and

WHEREAS, Such cases are now and have been accepted on this basis, and such fees have been paid to the veterans hospital; and

Whereas, Such practice places the Government controlled and subsidized hospital and doctors in direct competition with the local hospital and medical facilities; and

Whereas, This practice is both competitively unfair to the local agencies and detrimental to service of both agencies on both a local and national basis; now therefore be it

Resolved, By the House of Delegates of the Arizona Medical Association, Inc., on recommendation of its council, that it adopt a firm policy of disapproval of this procedure on the part of veterans hospitals; and be it further

Resolved, That a copy of this resolution be sent to each Representative and Senator of the State of Arizona, the Veterans Administration's national offices, the American Hospital Association, the American Medical Association and each state medical association.

Report of Reference Committee on Insurance and Medical Service

Dr. William D. Stovall, Chairman, presented the following report, which was adopted:

There were several members of the Association who appeared in favor of this resolution; there was no one who expressed disagreement with it. The committee agrees with the principle expressed in the resolution and recommends its adoption by the House of Delegates and that the House refer it to the Special Committee of the Board of Trustees now examining Federal Medical Services, a progress report from which was received at this meeting.

Resolution on Change in Executive Committees of Sections

Dr. Edgar V. Allen, Section on Experimental Medicine and Therapeutics, introduced the following resolution, which was referred to the Reference Committee on Sections and Section Work:

Whereas, The delegate for each Section serves as liaison officer between the Section and the House of Delegates; and

Whereas, Information and counsel received from the delegate has proved to be of help to the Section and the Section officers and

Whereas, A more definite fixing of responsibility on the part of the delegate for work of the Section is desirable; therefore be it

Resolved, That the delegate for each Section shall be a member of the Executive Committee of that Section.

Report of Reference Committee on Sections and Section Work

Dr. Grover C. Penberthy, Chairman, presented the following report, which, since it recommended a change in the Constitution and By-Laws, was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

The resolution pertaining to a change in the Executive Committees of Sections was introduced by Dr. E. V. Allen. After full discussion of this resolution, your committee makes the following recommendation, which necessitates a change in the Constitution and By-Laws, Chapter VII, Section 6, which, under this recommendation, is to read:

"Executive Committees of Sections.—Each section shall have an executive committee which shall consist of the chairman, the last two previous chairmen, the secretary and section delegate. In case of absence of a majority of the executive committee of the section from a Scientific Assembly, the chairman shall appoint one or more members of the section to constitute a majority. The Committee shall approve or disapprove for publication the papers read before the section. It shall act as the nominating committee of the section except *for the Section on Miscellaneous* Topics."

Your committee recommends the adoption of this resolution.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Leo F. Schniff, Chairman, presented the following report, which was adopted and the By-Laws declared amended accordingly:

The Reference Committee on Sections and Section Work has approved a resolution presented by Dr. E. V. Allen and has recommended a change in the By-Laws, amending Chapter VII, Section 6, which was referred to this committee. Your reference committee approves, and recommends adoption of this amendment.

Resolution on Provision of Funds to Defray Expenses of Section Delegates

Dr. Edgar V. Allen, Section on Experimental Medicine and Therapeutics, introduced the following resolution, which was referred to the Reference Committee on Sections and Section Work:

Whereas, No dues are collected by the Sections of the Scientific Assembly and no funds are available for reimbursing the Section delegates, who are elected by the members of each Section, for expenses incurred when representing the Sections twice annually at meetings of the House of Delegates; and

Whereas, Delegates from the various states, officers, Trustees, and many committee members are reimbursed for the expenses incurred for attendance at the sessions of the House of Delegates; and

Whereas, Some Delegates chosen by Sections have not been able to serve because of inability to finance personally the cost of attending two sessions each year of the House of Delegates; and

Whereas, It is contrary to the democratic policies of the American Medical Association to select Section delegates on a basis of financial ability to pay their own expenses to the sessions of the House of Delegates; and

Whereas, The liaison maintained between the Sections of the Scientific Assembly and the House of Delegates is of value to the Sections, the House of Delegates and the entire American Medical Association; therefore be it

Resolved, That the House of Delegates instruct the Board of Trustees to pay the expenses of the Section delegates incident to attendance of the sessions of the House of Delegates.

Report of Reference Committee on Sections and Section Work

Dr. Grover C. Penberthy, Chairman, presented the following report, which was adopted:

A second resolution was also introduced by Dr. E. V. Allen. After due discussion and consideration by members appearing before your committee, we recommend the following:

Whereas, No dues are collected by the Sections of the Scientific Assembly and no funds are available for reimbursing the Section delegates for expenses incurred when representing the Sections twice annually at meetings of the House of Delegates: and

Whereas, Delegates from the many states and many committee members are reimbursed for the expenses incurred for attendance at the sessions of the House of Delegates; and

Whereas, Some Delegates chosen by Sections have not been able to serve because of inability to finance personally the cost of attending two sessions each year of the House of Delegates; and

Whereas, It is contrary to the democratic policies of the American Medical Association to select Section Delegates on a basis of financial ability to pay their own expenses to the sessions of the House of Delegates; and

Whereas, The liaison maintained between the Sections of the Scientific Assembly and the House of Delegates is of value to the Sections, the House of Delegates and the entire American Medical Association; therefore, be it

Resolved, That the House of Delegates instruct the Board of Trustees to pay the transportation and per diem allowance, as determined by the Board of Trustees, of the Section Delegates incident to attendance of the sessions of the House of Delegates.

Resolution on Medical Care of Veterans

Dr. Hugh H. Hussey, District of Columbia, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

Resolved, That the American Medical Association favors action looking toward the reduction of medical care to veterans with non-service-connected disabilities except where the inability to provide for such service can be demonstrated.

Report of Reference Committee on Insurance and Medical Service

Dr. William D. Stovall, Chairman, presented the following report, which was adopted:

This resolution is similar to others which have been presented and are now under study by the Committee on Federal Medical Services and requires no special action by the House of Delegates at this time.

Resolution on Medical and Hospital Benefits for Dependents of Service Personnel

Dr. Hugh H. Hussey, District of Columbia, presented the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

Resolved, That legislation to provide medical and hospital benefits for dependents of service personnel at federal expense be opposed by the American Medical Association until need for such legislation is clearly demonstrated.

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. Joseph H. Howard, Chairman, presented the following report, which was adopted:

A resolution introduced by the delegate of the Medical Society of the District of Columbia pertained to medical and hospital benefits for dependents of service personnel. Your committee approves of this resolution but is of the opinion that further study is necessary and therefore suggests that the American Medical Association Board of Trustees committee now studying federal medical services conduct a more detailed study of this problem.

Resolution on Transfer of Disabled Veterans

Dr. Hugh H. Hussey, District of Columbia, introduced the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

Resolved, That the American Medical Association favors the transfer of seriously disabled veterans from service hospitals to Veterans Administration Facilities.

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. Joseph H. Howard, Chairman, presented the following report, which was adopted:

The committee approves of this resolution and calls the attention of the House to the fact that testimony before the committee indicated that this is being done as rapidly as possible. We approve of such transfers at as early a date as practicable.

Resolution on Reactivation of Committee on Motor Vehicle Accidents

Dr. Hugh H. Hussey, District of Columbia, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The continuing high mortality and disability due to automobile accidents is cause for great concern; and

WHEREAS, There is need for further efforts to reduce the number of accidents; therefore be it

Resolved, By this House of Delegates that the Committee on Motor Vehicle Accidents of the American Medical Association be reactivated.

REPORT OF REFERENCE COMMITTEE ON HYGIENE AND PUBLIC HEALTH

Dr. William F. Costello, Chairman, presented the following report, which was adopted:

Your reference committee recommends that this matter be referred to the Board of Trustees. It is suggested that the Board of Trustees communicate with the National Safety Council, the American Automobile Association and other interested organizations. If in their judgment the services of such a committee can be helpful to these organizations in accident prevention work, we recommend that the Board of Trustees reactivate the Committee on Motor Vehicle Accidents.

Resolution on Candidates for Public Office

Dr. Hugh H. Hussey, District of Columbia, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, It is the duty of every physician to discharge all the responsibilities of citizenship, including those of a political nature; and

WHEREAS, It is not the function of his professional medical organization to participate in partisan politics; therefore be it

Resolved, By the House of Delegates that The American Medical Association does not support any political party or any candidate for elective public office.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted:

Your committee considered the resolution introduced by Dr. Hugh H. Hussey on behalf of the Medical Society of the District of Columbia relative to candidates for public office. Your committee recommends its adoption.

Resolution on Change of Date for Deciding Apportionment of Delegates

Dr. George A. Earl, Minnesota, introduced the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, Section 1 (C) of Chapter IX, Division Three of the By-Laws of the American Medical Association designates Dec. 1 of each year as the date on which the number of active members is computed in determining apportionment of delegates to the said American Medical Association; and

WHEREAS, The payment of dues is frequently made by such members in the month of December; now therefore be it

Resolved, That the said Section 1 (C) of Chapter IX, Division Three of said By-Laws be amended by striking the number "1" in the sixth line thereof and inserting in lieu thereof the number "31"; that said section be further amended by striking the word "December" in the ninth line thereof and inserting in lieu thereof the word "January," and that said section be still further amended by striking the words "the next succeeding year" in the last line thereof and inserting in lieu thereof the words "that year."

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Dr. Leo F. Schiff, Chairman, submitted the following report, which was adopted and the By-Laws amended accordingly:

This resolution seeks to change the date of deciding on the apportionment of delegates from constituent associations from Dec. 1 to Dec. 31 of each year. It provides that the Secretary of the American Medical Association shall notify the respective constituent associations in January as to the number of delegates to which the constituent associations will be entitled for the current year. The reason advanced for this is that many state medical societies are still collecting dues from their members during the month of December of each year and find themselves possibly in a position of disadvantage if the apportionment is based on paid membership as of Dec. 1. Dr. Lull has assured the reference committee that this postponement of date of deciding apportionment will not make any great difference to procedure in his office. We therefore recommend the adoption of the resolution which, with some changes in wording made by the reference committee, reads as follows:

Resolved, That Section 1 (C) of Chapter IX, Division Three of the By-Laws be amended by substituting the date "December 31" for "December 1" in the sixth line; by substituting the word "January" for the word "December" in the ninth line; and deleting the phrase at the end of the paragraph "next succeeding year," substituting therefor the phrase "current year."

Resolution on Apportionment of Delegates

Dr. George A. Earl, Minnesota, introduced the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, Delegates from constituent state associations to the American Medical Association are elected or appointed according to Section 1 (B) of Chapter IX, Division Three of the By-Laws of the American Medical Association for two year terms and assume office Jan. 1, next after their election or appointment; and

WHEREAS, The apportionment of delegates as between the respective states is determined according to Section 1 (C) of Chapter IX, Division Three of the said By-Laws as of December 1 of each year which date is after said delegates have been elected or appointed; and

WHEREAS, Such requirements result in depriving certain elected delegates of the privilege of serving out the term for which they were duly elected, in the event it is determined on said date, to wit Dec. 1, that said state association is apportioned less than the then elected or appointed number of delegates; now therefore be it

Resolved, That Section 1 (C) of Chapter IX, Division Three of said By-Laws be amended by adding the following at the end thereof:

"Provided, however, that any delegate or alternate therefor, who at said time of apportionment is a duly elected or appointed delegate or alternate therefor, and who at the time of his election or appointment was elected or appointed in accordance with these By-Laws and has not completed the term for which he was duly elected or appointed shall be permitted to complete the said term of two years or portion thereof to which he was duly elected or appointed."

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. Leo F. Schiff, Chairman, presented the following report, which was adopted and the By-Laws declared so amended:

This resolution calls attention to the fact that delegates from constituent associations to the American Medical Association are elected for two-year terms, assuming office Jan. 1 next after their election. The apportionment of delegates from the constituent associations is decided on each year as of Dec. 1 (or 31, if another resolution by Dr. Earl is adopted), which date comes after delegates have been elected. If any constituent association has the size of its delegation reduced in accordance with the provisions of the By-Laws, it can happen that a delegate duly elected may not be allowed to serve, thereby depriving him and his association of a privilege to which they were entitled at the time of the election of such delegates. It was pointed out that a similar situation occasionally occurs in the Congress of the United States when the number of representatives allowed a given state might be reduced. In such cases, any duly elected member of the Congress from that state is allowed to serve out his term for which he was elected, even though this may temporarily result in a delegation larger than indicated by apportionment. It is suggested by the resolution that a similar procedure be adopted in this Association. The resolution, in which some changes in wording have been made by the reference committee, reads:

Resolved, That Section 1 (C), Chapter IX, Division Three of the By-Laws be amended by adding thereto the following sentence: "Any delegate or alternate who was elected or appointed in accordance with these By-Laws, and who at the time of apportionment has not completed the term for which he was duly elected or appointed shall be permitted to complete such term as delegate or alternate."

Provision for appointment has been made because of the fact that a delegate may possibly be appointed in certain instances to fill out an unexpired term.

Passage of this amendment will avoid a situation in which a state association with a certain number of duly elected delegates may find it necessary to reduce the size of the delegation. The question will arise as to which one of the delegates should be deprived of his office. On the other hand, it will of course result in some state or states temporarily having a delegation slightly larger than that to which they are entitled.

The matter was discussed with the proposer of the resolution, the Chairman of the Council on Constitution and By-Laws and Dr. Lull. It was agreed that, although this matter requires considerable further study by the Council on Constitution and By-Laws, this resolution should be adopted now to avert possible injustice and discontent among the state delegations.

Resolution on Physicians' Malpractice and Hospital Liability Insurance

Dr. J. P. Culpepper, Mississippi, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

Whereas, Commercial insurance companies which issue physicians' malpractice and hospital liability insurance base their premium rates on the total experience of claims in these obviously diversified types of insurance; and

Whereas, The Mississippi State Medical Association contends that this practice is unfair to the physician purchasing a malpractice insurance contract, now therefore be it

Resolved, That the House of Delegates of the American Medical Association require the appointment of a committee or committees to investigate and study this inequity and to undertake to achieve an agreement with the underwriting companies to the end that physicians' malpractice insurance be rated in separate and distinct categories and that premiums of each be based on the claims experience for this type of risk only.

Report of Reference Committee on Insurance and Medical Service

Dr. William D. Stovall, Chairman, presented the following report, which was adopted:

During the hearings on this resolution some differences of opinion arose. These revolved around whether or not it is an issue that has to be handled entirely by the individual state societies due to individual legal problems arising in the states, or whether it is a problem which should be recognized by the American Medical Association and some assistance given to the states in an effort to arrive at a satisfactory solution. The committee in its consideration following the hearings felt it could make no definite recommendation since it is not familiar with the various legal problems involved, and recommends that, lacking available information on the subject matter of the resolution, no action be taken at this time.

Resolution on Internships and Residencies

Dr. Samuel J. McClendon, California, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

Whereas, The number of internships and residencies now far exceeds the number of physicians available for these positions; and

Whereas, This situation is now creating a problem of inadequate medical coverage in many hospitals; and

Whereas, The employment of physicians by hospitals which cannot obtain interns and/or residents is creating a situation which jeopardizes the educational training program; and

Whereas, Such an imbalance may very well lead to further governmental intervention in our physician training programs; and

Whereas, The number of residencies and internships available seems to be increased by ever increasing demands of hospitals for larger resident staffs with resulting inability by some hospitals that do not offer the fullest training to obtain interns and residents; therefore be it

Resolved, That the House of Delegates of the American Medical Association instruct the Council on Medical Education and Hospitals of the American Medical Association to undertake an immediate restudy and reevaluation of the policy of establishing residencies and internships toward the purpose of correcting the gross imbalance between the large number of established residencies and internships and the small number of physicians available to fill them, with definite action, as soon as possible.

Report of Reference Committee on Medical Education and Hospitals

Dr. Edgar V. Allen, Chairman, presented the following report, which was adopted:

This resolution deals with the question of the number of internships and residencies exceeding the number of physicians available for these positions and requests the Council on Medical Education and Hospitals to undertake an immediate restudy and reevaluation of the policy of establishing residencies and internships toward the purpose of correcting the imbalance between the large number of established internships and residencies and the small number of physicians available to fill them with definite action as soon as possible. Your reference committee approves of this resolution.

Resolutions on Reevaluation of American Boards

Dr. John J. Curley, Massachusetts, introduced the following resolutions, which were referred to the Reference Committee on Medical Education and Hospitals:

Whereas, A continuance of the lengthy program for certification now required by certain boards tends to delay provision of medical care to the public and tends to promote concentration of physicians in heavily populated areas; and

Whereas, The disparity between the character of approval accorded university and teaching hospitals and the character of approval of other institutions tends to create an intern and residency problem; be it

Resolved, That the Massachusetts Medical Society, through its delegates to the American Medical Association, recommend to the 1952 session of that organization that the Council on Medical Education and Hospitals seek a reconsideration of the requirements of the American Boards to the end that certain residency programs be shortened in the interest of the public welfare; and be it further

Resolved, That the method of classifying services of a hospital in terms of years as announced by the Amer[illegible] in 1949 [illegible] sidered.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. Edgar V. Allen, Chairman, presented the following report, which was adopted:

These resolutions state that the disparity between the character of approval of the University and teaching hospitals, likewise other institutions, tends to create by reason of time consumed in training a delay in providing medical care for the public. They also require that the method of classifying services of a hospital in terms of years as announced by the American Boards in the medical specialties in 1949 be reconsidered.

Your reference committee approves of the intent of the first resolution, but disapproves of the wording, because as written it commits the Council to strive to shorten the period of intern and residency training.

Your reference committee appreciates the great amount of study and work which the Council on Medical Education and Hospitals, the Advisory Board for Medical Specialties, and the specialty boards have given to provide qualitative and quantitative training programs for interns and residents. Your committee, therefore, recommends to the House of Delegates of the American Medical Association, as assembled June 9, 1952, a substitute resolution that this report be referred to the Council on Medical Education and Hospitals for careful study and consideration as to what rearrangements if any can be made in this type of training. Your reference committee recommends the adoption of this substitute resolution.

Resolution on Cooperation Between Medical and Dental Professions

Dr. George Braunlich, Iowa, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, (1) The need for and the desirability of close cooperation between the medical profession and the dental profession for the welfare of the patient is imperative; and

WHEREAS, (2) The present requirements for approval of hospitals by the American Board of Oral-Dental Surgery are as follows:

"Dental practice that deals with the diagnosis, treatment, prescribing for, or operating upon any disease, injury, malformation, or deficiency of the human jaws or associated structures.

"It is a requirement of the Board that, if the Department of Oral Surgery is to be recognized by the Board, it must be separately organized and on a parity with other surgical departments. The staff member directly responsible for the administration of the training program should be certified by the American Board of Oral-(Dental) Surgery. Otherwise the Board has no way of gauging the scope of instruction. As a separately organized department the staff members and trainees should be empowered to admit and to discharge patients and be entirely responsible for the care of the oral surgery problem."; and

WHEREAS, (3) The statement "associated structures" in this requirement has encouraged some dentists to handle the treatment of malignancies and to do neck surgery and plastic surgery; and

WHEREAS, (4) A liberal interpretation of these requirements has, at the present time, been so made at certain institutions that dentists are invading the field of medicine, such invasion is dangerous to the welfare of the patient; and

WHEREAS, (5) Such an interpretation is contrary to the statutes of some states as expressed by opinions of their Departments of Health; therefore be it

Resolved, That the House of Delegates of the American Medical Association disapproves the recognition of the Board of Oral (Dental) Surgery requirements for hospital approval by that Board (as it affects individuals with a D.D.S. degree only) until changes are made in these requirements that will prevent those without M.D. degrees from invading the field of medical practice.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. Edgar V. Allen, Chairman, presented the following report, which was adopted:

Your reference committee is in accord with the intent of this resolution but feels that it should be disapproved at this time because certain requirements established by the American Board of Oral-Dental Surgery are capable of various interpretations. Your reference committee, therefore, recommends that the Board of Trustees of the American Medical Association confer with the American Board of Oral-Dental Surgery to the end that a clear definition of medical and dental services be established. It must not be forgotten that only properly qualified physicians may practice medicine.

Resolution on Osteopathy

Dr. Eugene F. Hoffman, California, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, It is in the public interest that the best medical care be generally available; and

WHEREAS, This objective would be furthered by eventual amalgamation of the medical and osteopathic professions in which future graduates and practitioners would have equal training of the highest scientific caliber; therefore be it

Resolved, That the House of Delegates of the American Medical Association urges immediate action to accomplish an eventual amalgamation of the medical and osteopathic professions under circumstances which would be acceptable to the Judicial Council and the Board of Trustees of the American Medical Association and that these bodies be requested to recommend specific procedures for the accomplishment of these objectives.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Patrick J. Sullivan, Chairman, presented the following report, which was adopted:

Your committee recommends that this resolution be referred to the Board of Trustees to appoint a committee for further study and consultation with the American Osteopathic Association if or when requested.

Resolution on Hospital and Medical Care of Veterans

Dr. Gerald V. Caughlan, Iowa, introduced the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

WHEREAS, The hospital and medical care of the veteran with service-connected disability or disease and the care of the medically indigent veteran with *non-service-connected disability* or disease is and should be the just concern of the public and the medical profession; and

WHEREAS, The free care of the veteran with non-service-connected disability or disease who can pay for his hospitalization and medical care is contrary to our traditional system of government and is an unwarranted burden on the taxpayer and threatens the quality of care to the deserving veteran by overloading the professional services of veterans hospitals; therefore be it

Resolved, That this House of Delegates strongly recommends that the Veterans Administration be required to furnish a form for oath as to the inability of the applicant to defray the necessary medical expenses, and that this oath shall be read to the applicant stating that he is signing an oath as to his financial status.

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. Joseph H. Howard, Chairman, submitted the following report, which was adopted after discussion:

The reference committee approves of the resolution in principle but suggests a change in wording by the deletion of the word "oath" and the substitution of the words "signed statement for eligibility to pay" and an explanation to the veteran so that he realizes that by signing this application he is admitting inability to pay.

Resolution on Limitation of Federal Taxation

Dr. John K. Glen, Texas, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Federal taxation has shown a steady tendency toward unlimited increase; and

WHEREAS, Such heavy federal taxation limits the state and local units of government in their taxing ability; and

WHEREAS, This trend of taxation by the federal government is rapidly destroying the economy of this Nation; and

WHEREAS, If this trend continues the state and local governmental units will become impotent and will in time have to rely entirely on doles from an all-powerful federal government; and

WHEREAS, It is felt that each physician should accept his responsibility not only as a physician but as a citizen and should actively participate in all matters at local, state and national levels that will help preserve those principles of government on which this Nation was founded; therefore be it

Resolved, That the House of Delegates of the American Medical Association go on record as favoring an amendment to the Constitution of the United States limiting the taxing power of the federal government.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Walter E. Vest, Chairman, presented the following report, which was adopted unanimously:

Your committee has considered carefully the resolution introduced by Dr. John K. Glen on behalf of the Texas delegation relative to the limitation of federal taxation. While your committee realizes that the prime objective of the American Medical Association is, and always has been, the furtherance of health through prevention and treatment of disease, medical research, and the improvement of medical education, it is apparent to all that these objectives can be attained only on the basis of a sound national economy not liable to disruption by confiscatory taxation imposed by a bureaucratic federal government. Your committee believes, moreover, that the time has arrived when the American Medical Association should approve broad basic governmental principles outside the actual field of medicine as pertaining to the general welfare of the American people. Therefore, your committee approves this resolution and recommends its adoption.

Resolution on Disapproval of Certain Veterans Administration Practices

Dr. H. Russell Brown, South Dakota, introduced the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

WHEREAS, It appears that United States Veterans Administration hospitals have been accepting non-service-connected cases who are known by them to be covered by insurance against hospital and medical expenses, or who are insured under Workmen's Compensation laws; and

WHEREAS, In treating such cases it has become the practice of the veterans hospitals to accept fees for hospital and medical care from insurance companies; and

WHEREAS, The practice of accepting non-service-connected cases definitely increases the demand for more hospital beds in veterans hospitals and sometimes prevents the acceptance of service-connected cases, who are more justly entitled to such hospital beds; and

WHEREAS, The practice of accepting non-service-connected cases who are covered by insurance against hospital and medical expenses, or who are insured under Workmen's Compensation laws, increases the demand for more and more personnel for the veterans hospitals, both medical and nursing staffs, as well as administrative; and

WHEREAS, Such increased personnel in the medical and nursing staffs is becoming more and more difficult to obtain because of increased quotas of physicians and nurses needed by the Armed Forces; and

WHEREAS, Such practice places the government-controlled and subsidized veterans hospitals and doctors in competition with local private hospitals and physicians; and

WHEREAS, This practice is competitively unfair to the local physicians and hospitals and detrimental to both medical agencies on a local and national level; therefore be it

Resolved, That the House of Delegates of the American Medical Association in session in June, 1952, adopt a firm policy of disapproval of practices of the Veterans Administration in accepting for medical care, non-service-connected cases which are covered by insurance and in accepting insurance company fees therefor.

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. Joseph H. Howard, Chairman, presented the following report, which was adopted:

The committee approves of this resolution but suggests that it requires study and recommendation and we suggest that it be referred to the Board of Trustees and to the Committee on Federal Medical Services.

Resolutions on Medical Care for Veterans

Dr. Raymond F. Peterson, Montana, introduced the following resolutions, which were referred to the Reference Committee on Medical Military Affairs:

WHEREAS, The members of the House of Delegates of the American Medical Association are in full agreement that veterans should receive the highest quality of medical and hospital care for service-connected disabilities and for diseases for which they are unable to pay necessary expenses; and

WHEREAS, The present Acts of Congress permit medical treatment of veterans with non-service-connected disabilities for which they are unable to pay; and

WHEREAS, Paragraph 30 on V.A. form 10 P 10 questions, "Are you financially able to pay necessary expenses of hospital or domiciliary care?", the answer to which is not allowed to be investigated; now therefore be it

Resolved, That we, the members of the House of Delegates of the American Medical Association, in regular session assembled this 9th day of June, 1952, urge the Congress of the United States to clarify the statement in the present Acts of Congress admitting veterans to veterans hospitals on certification of a statement that they are unable to pay for their hospital and medical care, and that the Veterans' Administration be empowered and directed to investigate such claims of veterans to determine their actual financial status; and be it further

Resolved, That a copy of this resolution be mailed to the President of the United States, the members of the United States Senate and House of Representatives, the Administrator of Veterans Affairs, and the Chief Medical Director of the Veterans Administration.

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. Joseph H. Howard, Chairman, presented the following report, which was adopted:

A resolution introduced by the delegate from Montana pertaining to non-service-connected disabilities was referred to the Board of Trustees and the special Committee on Federal Medical Services.

Report of Committee on Credentials

Dr. Karl S. J. Hohlen, Chairman, reported that there was nearly 100% registration of delegates, there being only one delegate, the representative of the Alaska Territorial Medical Association, not in attendance.

Introduction and Remarks of Dr. Ernest E. Claxton, Assistant Secretary, British Medical Association

Dr. George F. Lull, Secretary, presented Dr. Ernest E. Claxton, Assistant Secretary of the British Medical Association, who spoke to the House as follows:

Mr. Speaker, Members of the House of Delegates: This is a great privilege of a humble official on the staff of the British Medical Association, your sister body, if I may say so, to come here and present greetings from the British Medical Association. I happened to be in this country for a fortnight at Mackinac Island attending the World Assembly for the Moral Rearmament of the Nations and, hearing that the American Medical Association was meeting, I thought I must bring, at the request and desire of my President and Sir Henry Cullen, Dr. Clegg and Dr. Warren, who will be known to many of you here, the greetings of the British Medical Association.

I would like to congratulate you and thank you for your hospitality and particularly your President on his magnificent fighting speech yesterday. We in England have a lot to learn. We failed because we had no adequate alternative program, and I see over here that you have it, and you have more than that; you have fought for your nation and the world instead of just your own community.

I believe that medicine's role and destiny in this atomic age is to give the nations of the world the answer, the secret of living together, that medicine can be an inspiring, uniting and cleansing force in the nations, and that we move from treating sick people to treating a sick world. I believe friendship and caring and service and mutual understanding and a passion for what is right, not who is right, is the answer for an atomic age, and I have evidence that it is even reaching beyond the Iron Curtain. On that basis our Association, with your Association, will go places, and we would like to fight with you.

Presentation of Gavel to Dr. Louis H. Bauer

Dr. John M. Galbraith, President of the Nassau County, New York, Medical Society, presented Dr. Louis H. Bauer with a gavel, which he said the Nassau County Medical Society had been saving for thirty years to present to a President of the American Medical Association who was a member of the Nassau County society.

Resolution on Emergency Seating of Alternate Delegates

Dr. John J. Curley, Massachusetts, introduced the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, The House of Delegates of the American Medical Association has expressed its opinion that all states and territories should be represented at all times in sessions of the House of Delegates; and

WHEREAS, The House of Delegates approved a change in the Constitution and By-Laws of the American Medical Association at its 1951 Annual Session whereby in emergencies a responsible state officer may designate an alternate to represent a delegate, if such delegate is taken ill or called away from a meeting of the House of Delegates; and

WHEREAS, It is often difficult to get a state officer, namely the president or secretary of a state or territorial association, to give a written credential to an alternate; and

WHEREAS, Often the president or secretary of a state or territorial association is not present at the meetings of the House of Delegates; and

WHEREAS, Some state and territorial associations elect a specific alternate for each delegate to the meetings of the House of Delegates; therefore be it

Resolved, That in case of emergency as designated by the House of Delegates and in case a responsible officer of a state or territorial medical association cannot give written credentials to an alternate of that state or territorial medical association, a majority of the delegates of such state or territorial medical association shall be allowed to designate any duly elected alternate to represent that state or territorial medical association for the remainder of the meeting of the House of Delegates. In the states or territories where one to three represent the above mentioned associations, the single member or the two remaining members shall be permitted to choose the alternate to represent their state or territory if a responsible state or territorial officer cannot be reached to designate the alternate to represent the absent delegate.

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Dr. Leo F. Schiff, Chairman, presented the following report, which was adopted:

This resolution seeks an amendment to the By-Laws whereby the delegation of a constituent association would be authorized in certain emergencies to appoint alternate delegates. It would require an amendment to Chapter IX, Section 1 (D) (page 24). A close study of this section of the By-Laws brings out the fact that it is in conflict with Section 2, Article 6 of the Constitution. If any action is to be taken on this proposed amendment to the By-Laws it must be preceded by an appropriate change in the Constitution. The matter is therefore recommended to be referred to the Council on Constitution and By-Laws, at the same time calling its attention to the conflict between the last paragraph of Section 1 (D), Chapter IX of the By-Laws with the Constitution.

Resolution on Jurisdiction of Judicial Council

The Speaker, for Dr. Louis A. Buie, Section on Gastro-Enterology and Proctology, presented the following resolution, which he referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, The deliberations of the Judicial Council are impeded by the provision in Chapter X, Section 4 (H), paragraph 2, first sentence, page 32, which reads in part as follows: "The Council shall have appellate jurisdiction in questions of law and procedure but not of fact . . ."; and

WHEREAS, The interests of the members of the medical profession, the component and the constiuent societies and the American Medical Association are jeopardized because of this provision; therefore be it

Resolved, That that portion of the first sentence of Chapter X, Section 4 (H), paragraph 2, on page 32, be changed so that it will read: "The Council shall have appellate jurisdiction in question of law, procedure and fact . . ."

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Dr. Leo F. Schiff, Chairman, submitted the following report, which was adopted:

After considerable discussion with delegates from several constituent state associations and a state executive officer and an attorney, it was brought out that the suggested change might be contrary to certain accepted principles of law. It is therefore recommended that this proposed amendment to the By-Laws should not be acted on at the present time but should be referred to the Council on Constitution and By-Laws for study and legal review and advice, for report at the Interim Session of this House of Delegates. Dr. Buie, sponsor of the resolution, was present at the meeting and agreed to this recommendation.

Supplementary Report of Board of Trustees on Military Credit for Internships in Military Hospitals

Dr. Dwight H. Murray, Chairman, presented the following supplementary report of the Board of Trustees, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

Existing administration regulations of the Department of Defense recognize the period spent in military internships toward the discharge of obligatory service under Public Law 779, 81st Congress, for physicians classified in Priority 3 under that law, and this policy results in an undue advantage for military hospitals in competing with civilian hospitals for medical graduates.

The Board of Trustees, therefore, recommends that the American Medical Association oppose any regulation which would thus allow internship service to count against total military and reserve obligation and that this opposition be communicated to the Secretary of Defense.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. Harold F. R. Brown, member of the reference committee, presented the following report, which was adopted:

Your committee, after consultation with official representatives of the armed and public health services, finds out that at the present time existing administrative regulations of the Department of Defense do not allow the period spent in military internships toward the discharge of obligatory service under Public Health Law 779 (draft law for doctors). As a matter of fact, anyone serving one year in military internship is obliged to spend an extra year beyond the usual twenty-four month period in the armed services. Your committee therefore recommends that the House of Delegates approve the suggestion of the Board of Trustees that the American Medical Association oppose any regulation which would allow intern service to count against total military and reserve obligation, and that this opposition be communicated to the Secretary of Defense.

Supplementary Report of Board of Trustees on Citation for Distinguished Service

Dr. Dwight H. Murray, Chairman, presented the following supplementary report of the Board of Trustees, which was adopted unanimously:

The Board of Trustees wishes to submit to the House of Delegates at this time the name of the late Howard W. Blakeslee, science editor for the Associated Press, as the recipient of the Citation for Distinguished Service. Mr. Blakeslee died suddenly on May 2, 1952, after a long newspaper career, 25 years of which were devoted to science writing. Although he had no formal scientific education, he pioneered in a job that eventually brought him success, honor and respect. He was noted for the accuracy of his stories about medicine and medical research and received many honors, including the Pulitzer Prize for Reporting in 1937. If the House of Delegates approves of the presentation, posthumously, of the Citation for Distinguished Service to Mr. Blakeslee, a suitably engrossed certificate will be prepared and sent to his widow.

Resolutions on *Health Needs of the Nation*

Dr. Earle M. Chapman, Massachusetts, introduced the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The health needs of each individual, each community and each state within the Nation are of immediate and continuing concern to every physician; and

WHEREAS, The proper appraisal of these needs and the formulation and execution of effective health programs to meet these needs require the cooperative effort of all professional health organizations, of all voluntary and governmental health agencies, of business, agriculture, and labor, and of all other groups representative of the general public; and

WHEREAS, Temporary committees or commissions organized by any single interest, no matter how diligently or sincerely they may approach these problems, cannot develop a comprehensive and continuing study of the health needs of the Nation; and

WHEREAS, There now exists a national voluntary coordinating body, the National Health Council, which is representative of 42 national organizations concerned with health, including the American Medical Association (a founding—in 1921—and active member), and which offers a proper mechanism for health planning throughout the Nation; therefore be it

Resolved, That the American Medical Association through its House of Delegates affirm at this meeting its full support of the National Health Council; and be it further

Resolved, That the House of Delegates direct the officers and Trustees of the American Medical Association to request the National Health Council to undertake a comprehensive and continuing study of the health needs of the nation and to report back to the House of Delegates at its interim meeting, December, 1952, the response of the National Health Council to this request.

REPORT OF REFERENCE COMMITTEE ON HYGIENE AND PUBLIC HEALTH

Dr. William F. Costello, Chairman, presented the following report, which was adopted:

Your reference committee considered this resolution and was assisted in its deliberation by Dr. Earle M. Chapman, Dr. Thomas P. Murdock and Dr. Lewis S. Pilcher. In view of the fact that many surveys by several agencies are now in progress and reports from at least two of them are expected in the near future, it seems inadvisable at this time for the American Medical Association to engage in any other surveys, and we recommend the rejection of this resolution.

Telegram from Mr. Millard Caldwell, Federal Civil Defense Administrator

Dr. George F. Lull, Secretary, read to the House the following telegram addressed to the President and Members of the Board of Trustees of the American Medical Association:

"America is indebted to the American Medical Association for its splendid work in promoting the Nation's health and welfare in peace and in war. Our special congratulations to the Association for the development of its excellent and far-reaching program of civil defense medical preparedness under the guidance of the Council on National Emergency Medical Service. No professional group in the Nation has taken more action than the medical profession to meet disastrous consequences of an all-out enemy attack on the American home front. The possibility of hundreds of thousands of civilian casualties in our cities has nowhere been more realistically appraised than in your group. The sound medical programs for meeting such a civil defense emergency are well advanced. If an attack should come, they will result in saving thousands of lives that might otherwise be lost. But doctors can not work without supplies and equipment. By June 30 of this year a total of eighty-one million dollars worth of civil defense emergency medical supplies and equipment will be available or in production for civil defense emergency. Fifty-nine million dollars will be in federal stockpiles and twenty-two million dollars worth will be stockpiled by the states with fifty per cent matching funds from the federal government. We hope to be able to provide to the full extent of funds made available to us the emergency medical supplies and equipment necessary to enable American doctors to do the excellent job they are prepared to do in the event of a smashing, all-out attack on the home front of the United States."

Telegram from Dr. T. C. Routley, Secretary, Canadian Medical Association

Dr. George F. Lull, Secretary, read the following telegram from Dr. T. C. Routley, Secretary of the Canadian Medical Association: All of us here in Banff at the 83d annual meeting of the Canadian Medical Association send most cordial greetings to all of you good neighbors in annual session assembled. May I add my own personal wishes and say how sorry I am that I cannot be with you. Kindest regards.

Gifts to American Medical Education Foundation from Woman's Auxiliary

Dr. Louis H. Bauer, President, called Dr. Elmer L. Henderson to the platform to receive a check for $10,000 made out to the American Medical Education Foundation, which had been presented to Dr. Bauer at the annual luncheon of the Woman's Auxiliary with the officers and Trustees of the American Medical Association.

Dr. Bauer also presented Dr. Henderson with a check for $100, representing a personal wedding anniversary gift from the retiring President of the Auxiliary, Mrs. Wahlquist, and her husband, Dr. Harold F. Wahlquist.

Dr. Henderson, President of the Foundation, accepted the gifts with the following remarks:

Thank you, Dr. Bauer, for bringing these checks, and I want to thank the Woman's Auxiliary publicly for its generosity. If you remember, last year they gave us $10,000. They are doing it again this year, and I hope they will be able to continue to do so. I also want to thank Dr. and Mrs. Wahlquist for their contribution of $100. I think it is a wonderful way to celebrate their anniversary.

As you know, the other day Dr. Mather Pfeiffenberger of Illinois presented me with a check for $1,000, a gift from him and his wife. He later talked with me and suggested that we create a $1,000 Club. I think that is wonderful. I wish we could create a $1,000 Club and have a couple of hundred thousand members. Last year eight members of the American Medical Association gave $1,000 apiece, and I am hoping those eight members will do the same thing this year.

There was another man who came to me, an officer of this Association, who suggested that we establish a $100 Club, a club of people who contribute $100 a year, and have men pledged to give $100 a year so long as they live or so long as they are financially able to give $100 a year. I think that is a splendid idea.

Gentlemen, this is a job that must be done by the doctors. The obligation is ours, and we cannot afford to let medical education get into the hands of the federal government.

On motion of Dr. Walter E. Vest, West Virginia, the House voted to direct the Secretary to telephone the Woman's Auxiliary in session at the Conrad Hilton Hotel and extend the thanks of the House of Delegates to the Auxiliary and also to Dr. and Mrs. Wahlquist.

Resolutions Commending Services of Dr. John W. Cline

Dr. William A. Hyland, Michigan, with the unanimous consent of the House, presented the following resolutions, which were adopted by a unanimous rising vote:

WHEREAS, Dr. John W. Cline has capably and vigorously discharged the many heavy duties and responsibilities of the office of President of the American Medical Association this past year and with the dignity and tact that are his attributes; and

WHEREAS, His modesty is such as would forbid this expression of indebtedness and esteem for his service on behalf of all doctors of medicine; and

WHEREAS, We, the members of the House of Delegates, are in the position to appreciate fully the contributions and the sacrifices he has made, especially in his forceful opposition to socialism in all of its myriad forms; now therefore be it

Resolved, That this House of Delegates by the adoption of this resolution, herewith officially express its commendation and heartfelt thanks to Dr. Cline for his devotion to the ideals of our profession and his real contributions toward its advancement during his tenure of office as President of the American Medical Association, and by so adopting this resolution we again bespeak our respect and affection; and be it further

Resolved, That a copy of this resolution, after being spread upon the minutes, be made and attested to and presented to Dr. Cline.

Resolution on Participation of Specialists in Emergency Medical Service

Dr. Leo F. Schiff, New York, by unanimous consent, introduced the following resolution, which was adopted:

WHEREAS, As result of a resolution passed by this House of Delegates, the Council on Medical Education and Hospitals, through the Liaison Committee of the Council on Medical Education and Hospitals and the Advisory Board of Medical Specialties, has urged the Advisory Board of Medical Specialties to take action so that participation in emergency medical service should not prejudice the standing of a physician with a specialty board; now be it

Resolved, That the Trustees of the American Medical Association are hereby urged to exert continuing pressure so that the objectives of the foresaid resolution of this House of Delegates may not fail of achievement.

Resolution on Change in Name of Grievance Committee

Dr. Joseph F. Shuffield, Arkansas, presented the following resolution, which was referred to "an appropriate" reference committee for report at the December interim session:

Whereas, The name Grievance Committee carries a certain opprobrium and might be misleading in the eyes of the public; and

Whereas, The work to be accomplished by this committee is to foster better public relations, giving the public knowledge and information that a committee exists to settle any differences that might arise between the patient and his physician; and

Whereas, The name Professional Relations Committee is readily recognized as being a committee to settle such difficulties; therefore be it

Resolved, That the name Grievance Committee be changed to Professional Relations Committee.

Recognition of Distinguished Guest

The Secretary announced that a visitor from the Argentine, Dr. William P. Giles, was present, and Dr. Giles received the recognition of the House.

Remarks of Chairman of Committee on Distinguished Service Award

Dr. Edgar V. Allen, Chairman, addressed the House as follows: As the Chairman of the Committee on the Distinguished Service Award, I would like to call to the attention of the members of the House of Delegates an oversight on the part of the delegates. In the last two years, there have been but two nominations for the Distinguished Service Award, and, although those who have been nominated previously are kept on the list, the list, of necessity, gets a bit small. The committee believes that this is owing to an oversight and lack of knowledge on the part of the delegates that they may present appropriate nominations for the Distinguished Service Award.

Roll Call

The Secretary called the roll, and more than a quorum answered.

Presentation of Director of Joint Commission on Accreditation of Hospitals

Dr. Gunnar Gundersen, Trustee, presented to the House Dr. Edwin L. Crosby of Baltimore, introducing him as follows:

I am appearing here as a member of the Board, but, more importantly, as your representative on the Joint Commission on Accreditation of Hospitals and its chairman. As you know, the American Medical Association has a very vital stake in this commission, which is composed of 20 members, 6 representatives being from the American Medical Association. Consequently, 6/20th of the cost of this newly created Commission is our responsibility. I am happy to be able to present to you today the newly chosen director of that commission. For the purpose of making you acquainted with him, I have the great privilege of presenting to you Dr. Edwin L. Crosby, of Baltimore, our new director, who will take office and begin functioning on the first of September.

Supplementary Report of Board of Trustees on H.R. 7800

Dr. Dwight H. Murray, Chairman, received the unanimous consent of the House to present the following report, in the form of a resolution, which the House, by unanimous consent, voted to consider without referral to a reference committee:

Whereas, Congressman Doughton, on May 12, introduced in the Congress an omnibus measure, H.R. 7800, 82nd Congress, providing for various amendments to Title II of the Social Security Act, which bill was reported favorably by the Ways and Means Committee of the House of Representatives on May 16 and brought before the House of Representatives on May 19 under a suspension of the rules; and

Whereas, Section 3 of this measure provided for the introduction of a new theory in the Social Security program which, in its implementation, could result in the socialization of the medical profession, inasmuch as it would provide that the Federal Security Administrator would

(*a*) determine what constitutes permanent and total disability;

(*b*) establish the types of proof necessary to establish permanent and total disability;

(*c*) provide by regulation when and where physical examinations should be taken;

(*d*) be authorized to prescribe the examining physician or agency (including federal installations);

(*e*) establish the fees;

(*f*) be authorized to pay travel expenses and subsistence incident to the taking of such physical examinations; and

(*g*) have power to curtail Old Age and Survivors' insurance benefits because of noncompliance with regulations of this section; and

Whereas, The American Medical Association strongly protested against its adoption without full and complete hearings with respect to the controversial provisions of Section 3 of the bill; and

Whereas, Following the rejection of the bill on May 19 by the House of Representatives, certain amendments were made to the bill by the House Ways and Means Committee which purport to eliminate the objectionable features of Section 3; and

Whereas, Notwithstanding certain deletions from Section 3, the fundamental purpose of this bill to extend the power and authority of the Federal Security Administrator remains unchanged, and the deletions which have been made are only another attempt to hoodwink the public into believing the Section is completely altruistic; and

Whereas, The attempt is again being made to present this bill to the House of Representatives next Monday (June 16) under a suspension of the rules; and

Whereas, The defeat of H.R. 7800, depriving Social Security beneficiaries of numerous additional benefits was a direct result of the Truman administration's attempt to play politics by tying in a socialized medicine scheme with an otherwise popular measure; therefore be it

Resolved, That the American Medical Association condemns the breach of faith by the administration with those who would benefit from this bill in a flagrant attempt to railroad through a provision to aid in the socialization of medicine which could not possibly be adopted if considered openly and fairly.

Executive Session

On motion, duly seconded and carried by a vote of 91 to 53, the House of Delegates went into Executive Session for the purpose of considering the supplementary report of the Board of Trustees on H. R. 7800.

While the House was in Executive Session, the matter under consideration was discussed by the immediate Past President, the President, the Chairman and a member of the Board of Trustees, the secretary of the Committee on Legislation, the Director of the Washington Office and several delegates.

Regular Session

The House rose from Executive Session and the President, Dr. Louis H. Bauer, summarized the discussion therein, as follows:

Mr. Speaker, Members of the House: The House has risen from Executive Session. It has not taken any action as yet, as it was felt that that action should be taken in open session. It was also felt that those who were not present were entitled to hear the gist of what was said during the Executive Session, and in order not to take too much time, I shall endeavor to summarize the majority of the discussion made from the floor and what I said myself.

Much of the discussion was based on questions, because members of the House, I think, did not understand exactly the purport of this resolution. A part of the misunderstanding was, as I said a few minutes ago, in executive session, because they didn't hear the resolution due to all the noise that was going on.

May I make it clear that there has been no effort at any time to oppose the extension of the Social Security benefits under seven of the eight sections of the bill. There was only opposition to one section which provided for certain disability provisions. The original bill had this spelled out, gave authority to the Federal Security Administrator to carry out and implement this bill, and specified certain of the things which he could do. In the deletions, they deleted those specific functions but left in, of course, the provision that it was still under the jurisdiction of the Federal Security Administrator, and he could write those specific provisions under the general authority given to the Administrator to write rules and regulations, and he could either put the same ones, or worse ones, in and you couldn't do very much about it. That was the reason for our opposition to that particular Section.

The bill was defeated. The American Medical Association, one person said, had been responsible for defeating it. But someone else stated that he didn't think that that was wholly true, that undoubtedly our opinion on this had had some weight, but he thought the majority of Congressmen, and I believe he was right in this, opposed this primarily because of the manner in which they were trying to push it through. In other words, instead of holding hearings on this and giving the public an opportunity to come down and testify for or against the provision, it was done in committee, was rushed into the House under a special rule which provided that the bill must be adopted, rejected or referred back to the Committee; no amendments would be permitted, no deletions would be permitted, and a total of 40 minutes' debate only would be allowed, 20 minutes for each side. This was done under the guise of its being an emergency measure. There was nothing emergency about it, and it was a distinct political trick to try to tie a provision, that would never in the world have been passed had it been standing by itself, to something else. They hoped they could pass it by tying it on to a bill which was otherwise popular.

I want to stress again the fact that the American Medical Association does not and has not opposed the increase of benefits to those receiving such benefits from Social Security. We do object to letting the Federal Security Administrator enlarge any of his powers in the field of medicine, and we object particularly to the manner in which the Administration tried to put this over.

The purport of this resolution is merely to condemn the Administration for trying to hoodwink the public, trying to put something over in an undemocratic fashion. It has not asked anybody to vote against anything. It is merely making our position clear.

After further discussion by many present, the following resolution, presented by Dr. Louis M. Orr II, Florida, as an amendment and addition to the original resolution presented in the supplementary report of the Board of Trustees, was adopted:

Resolved, That the American Medical Association urges that Congress rerefer this bill to the Committee where it should be subject to the ordinary democratic processes of legislation.

The original resolution, as amended, was then adopted.

Election of Officers

The following officers were elected:

President-Elect: Dr. Edward J. McCormick, Toledo, Ohio.

Vice President: Dr. Leo F. Schiff, Plattsburg, N. Y.

Secretary: Dr. George F. Lull, Chicago.

Treasurer: Dr. J. J. Moore, Chicago.

Speaker, House of Delegates: Dr. James R. Reuling, Bayside, N. Y.

Vice Speaker, House of Delegates: Dr. E. Vincent Askey, Los Angeles.

Members, Board of Trustees: Dr. Dwight H. Murray, Napa, Calif.; Dr. James R. McVay, Kansas City, Mo.

Member, Judicial Council: Dr. Homer L. Pearson Jr., Miami, Fla.

Member, Council on Scientific Assembly: Dr. Stanley P. Reimann, Philadelphia.

Members, Council on Medical Education and Hospitals: Dr. Herman G. Weiskotten, Skaneateles, N. Y.; Dr. John W. Cline, San Francisco; Dr. James M. Faulkner, Boston; Dr. Charles T. Stone Sr., Galveston, Texas; Dr. Leland S. McKittrick, Boston.

Members, Council on Medical Service: Dr. Elmer L. Hess, Erie, Pa.; Dr. Carlton E. Wertz, Buffalo, N. Y.; Dr. James Q. Graves, Monroe, La.

Member, Council on Constitution and By-Laws: Dr. James Stevenson, Tulsa, Okla.

Place of 1955 Annual Session

On recommendation of the Board of Trustees, the House of Delegates voted to accept the invitation to hold the Annual Session in Atlantic City, N. J., in 1955.

Election of Affiliate Members

On nomination by the Judicial Council:

Dr. Theodore F. Braun, Columbus, Ohio.

Dr. John A. Cremer, Dembi Dollo, Ethiopia.

Dr. Burton C. Dyson, Hamadan, Iran.

Dr. Ivanoel Gibbins, Ambala City, Punjab, India.

Dr. Paul Stayer Hoover, Bulsar, Surat District, India.

Dr. John F. Sheldon, Salisbury, Southern Rhodesia, Africa.

On nomination by the Section on Pathology and Physiology:

Fredrick Gudernatsch, Ph.D., Sc.D., New York.

Nominations for Associate Fellowship

Dr. George F. Lull, Secretary, presented the following statement:

Mr. Speaker: Nominations for Associate Fellowship have been received from several state medical associations. It has been impossible to process them in the headquarters office because of the uncertainty as to how the Constitution and By-Laws would be modified at this session. Since the By-Laws are now amended, making Associate Fellows Associate Members, I would ask that these nominations be deferred until the next meeting of the House of Delegates.

The House voted to defer election of Associate Members until the next session, when the nominations could be properly presented.

Address of President-Elect Edward J. McCormick

The newly elected President-Elect, Dr. Edward J. McCormick, was brought to the platform, and addressed the House as follows:

Mr. Speaker, President Bauer, Officers of the American Medical Association, Members of the House of Delegates, Ladies and Gentlemen: I am not much of a self-diagnostician. There is some question in my mind at the present moment as to whether I am suffering from hyperadrenalism or hyperthyroidism. My legs are a little feeble and somewhat weak. I recognize that you have conferred on me the greatest honor that can come to any man in medicine in the United States of America. I am not one to accept an honor lightly. I recognize the responsibility.

You have heard many excellent speeches during this meeting, including those by our Past President, Dr. Cline, and our present President, Dr. Bauer. It is not my intention, at the end of this rather long meeting, to bore you with any kind of a prepared speech. I simply want to say to you that I do recognize the responsibility that comes with the honor which you have so kindly given to me, and I want you to know that within my limitations I shall do everything in my power to discharge the responsibility and the obligation. I only hope that I am of sufficient stature to fit into the line of distinguished men who have held this office before me. I shall do my very, very best, and I hope that when I come to you with an accounting of my stewardship, I shall cause you to have a feeling of great satisfaction. I shall do everything in my power for American medicine and for the preservation of the democracy which has made this country the greatest country in the history of the world. Thank you so much.

Address of Dr. F. F. Borzell

Dr. F. F. Borzell, retiring Speaker, addressed the House:

Mr. Speaker and Members of the House of Delegates: I wish to take this opportunity before the more or less disorder that develops at the latter moments of the session to express to the House, as I conclude the afternoon's session and ring down the gavel on this 101st Session, my extreme appreciation for the courtesies that you have shown me, for the opportunity that you have given me to serve American medicine and the American Medical Association as your Speaker, and I wish for this House all of the good fortune possible. I hope it will maintain that same integrity, that same courageous, unswerving course of devotion toward American medicine it has shown in the past, and that you will prevent, by your activities, America from going anywhere but in the direction of liberty and freedom.

The House of Delegates gave Dr. Borzell a rising vote of thanks for his grand services to the House.

Vote of Thanks

A cordial greeting and message of thanks was extended to the Chicago Medical Society and the Illinois State Medical Society for the hospitality and fine treatment received.

The House adjourned sine die at 4:40 p. m., Thursday, June 12.

MEDICAL NEWS

ALABAMA

State Medical Election.—At its recent annual meeting in Montgomery the Medical Association of the State of Alabama installed Dr. Benjamin W. McNease of Fayette as president, Dr. James O. Morgan, Gadsden, as president-elect; and Dr. Douglas L. Cannon, Montgomery, secretary-treasurer.

Narcotic Violation.—Dr. Ambrose Tilden Grayson of Huntsville pleaded nolo contendere to a violation of title 26, U. S. C. sec. 2554, in the United States District Court at Birmingham on April 10. His sentence was suspended, and he was placed on probation for three years on condition that he surrender his special tax stamp and not re-register during the period of probation. He was fined $250.

Society News.—At the meeting of the Alabama Association of Pathologists, May 15, Dr. Charles R. Lafferty, Montgomery, was elected vice-president and not Dr. Earl B. Wert, Mobile, as previously announced.——At a recent meeting of the Alabama Radiological Society Dr. William D. Anderson of Tuscaloosa was elected president; Dr. Courtney S. Stickley, Montgomery, vice-president; and Dr. James A. Meadows Jr., Birmingham, secretary-treasurer.

CALIFORNIA

Cancer Class Open to Public.—A special course open to the public as well as to students and teachers attending the regular summer session at the college on the social, biological, and health problems of cancer will be offered at Mills College, Oakland. No academic requirements have been set as a prerequisite for taking the course. The course is being given in cooperation with the California division of the American Cancer Society. It will include six lectures, the first of which will be delivered on July 7 by Dr. Michael B. Shimkin, director of the University of California laboratory of experimental oncology.

University News.—John F. Kessel, Ph.D., professor of infectious diseases, Medical School on the Los Angeles campus of the University of California, has returned after spending six months in field studies at the Institut des Recherches Médicales de l'Océanie Française in Tahiti. The university's Pacific Tropic Disease Research Project is engaged in a cooperative research program with the French government at the institute.——Richard J. Winzler, Ph.D., professor of biochemistry and nutrition at the University of Southern California School of Medicine, has accepted appointment as professor and head of the department of biological chemistry at the University of Illinois College of Medicine, Chicago.

COLORADO

Service Awards to Professors.—Five professors were given 25 year service awards at the annual meeting of the University of Colorado Medical Alumni Association, June 6. Following were the recipients of the awards:

Ralph W. Danielson, head of the division of ophthalmology.
Daniel R. Higbee, head of the division of urology.
Douglas W. Macomber, head of the division of plastic surgery.
Roderick J. McDonald, assistant clinical professor of pediatrics.
Osgoode S. Philpott, clinical professor of dermatology and syphilology.

The association elected Dr. McDonald president and Dr. Oscar T. Clagett of the Mayo Foundation in Rochester, Minn., vice-president. Dr. Edward R. Mugrage was reelected secretary-treasurer, and Dr. John H. Amesse was named as his assistant.

CONNECTICUT

Dr. Lippard Appointed Dean at Yale.—Dr. Vernon W. Lippard became dean of the Yale University School of Medicine, New Haven, on July 1, returning to his alma mater from the University of Virginia, Charlottesville, where he has been dean of the department of medicine since 1949. From 1946 to 1949 he was dean of the Louisiana State University School of Medicine in New Orleans and from 1939 to 1946 associate dean of the Columbia University College of Physicians and Surgeons, New York. Dr. Lippard succeeds Dr. C. N. Hugh Long, who is giving up administrative duties to devote full time to research in physiology and as chairman of the department of physiology. A member of the faculty since 1936, when he came to Yale as professor of physiological chemistry and chairman of that department, Dr. Long was appointed dean of the School of Medicine in 1947. He had previously taught at the University College in London, England, and at McGill University Faculty of Medicine, Montreal, Canada, and had served as director of the George S. Cox Medical Research Institute at the University of Pennsylvania, Philadelphia.

ILLINOIS

Society Elections.—At the May 24 meeting of the Illinois Psychiatric Society Dr. Jules H. Masserman, Chicago, was elected president; Dr. Alfred P. Bay, Manteno, Ill., vice-president; Dr. Edward J. Kelleher, Chicago, secretary-treasurer; and Drs. William H. Haines and Percival Bailey, both of Chicago, councilors.

Decline in Tuberculosis Deaths.—Seven Illinois counties (Boone, Calhoun, DeWitt, Edwards, Henderson, JoDaviess, and Moultrie) reported no deaths from tuberculosis during 1951. The tuberculosis mortality rate for the state as a whole was the lowest in Illinois history, 21.3 per 100,000 population. About 65% (1,232 fatalities) of the Illinois deaths were reported from Chicago; this is a mortality rate of 33.6 per 100,000 in contrast to the rate of 12.7 downstate.

Chicago

Personals.—Dr. Florian E. Schmidt was recently appointed medical director of the Chicago Heart Association.——Dr. Isidore Snapper, clinical professor of medicine at Columbia University College of Physicians and Surgeons, New York, has accepted the position of director of medical education at Cook County Hospital and professor of medicine at the Cook County Graduate School of Medicine, Chicago, effective about Oct. 1.

Society News.—The North Shore Branch of the Chicago Medical Society will hold its annual golf tournament Aug. 27 at Bunker Hill Golf Club, 6635 Milwaukee Ave. (phone NIles 9890).——At a recent meeting of the Chicago Psychoanalytic Society Dr. Hugh T. Carmichael was elected president; Dr. Lucia E. Tower, vice-president; Dr. Louis B. Shapiro, secretary; and Dr. Joan Fleming, treasurer.——At the annual meeting of the Metropolitan Dermatological Society of Chicago, May 14, the following officers were elected: Dr. Rudolph Lackenbacher, president; Dr. Franz Baumann, vice-president; and Dr. Tibor Benedek, secretary-treasurer.

KANSAS

Appointment at Menninger Foundation.—Dr. Cotter Hirschberg, professor of child psychiatry, University of Colorado Medical Center, Denver, and director of the center's mental hygiene and child guidance clinic, has been appointed director of the department of child psychiatry, including the Southard School, at the Menninger Foundation, Topeka. He succeeds Dr. Edward D. Greenwood, who is now a special assistant to Dr. William C. Menninger and a consultant in child psychiatry.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting

KENTUCKY

Kentucky Centennial Volume.—The volume entitled "Papers Presented Before the Ephraim McDowell Memorial Meeting, Centennial of the Kentucky State Medical Association" has been published. Edited by Dr. Emmet Field Horine of Brooks, association historian, it depicts the progress of the state medical association and its relation to medical advances in the past 100 years, and includes pictures of past presidents and secretaries and a sketch of Dr. Ephraim McDowell. Papers presented at the meeting by physicians born or educated in Kentucky, together with their biographical sketches and pictures, are also incorporated.

Personals.—Dr. Carlisle Morse, Louisville, has been appointed a member of the Committee on Diabetes Detection and Education of the American Diabetes Association.——Dr. William R. Miner, Covington, was installed as president of the Southeastern Urological Society at its annual meeting in Florida recently.——Dr. Rudolph J. Noer, associate professor of surgery and assistant dean at Wayne University School of Medicine, Detroit, will assume his duties as head of the department of surgery of the University of Louisville School of Medicine, Sept. 1, at which time he will also become chief of surgery of the Louisville General Hospital. Dr. Noer replaces Dr. R. Arnold Griswold, whose resignation became effective July 1.

MASSACHUSETTS

Phi Chi Lecture.—Dr. Harold D. Levine, clinical associate in medicine at Harvard Medical School, Boston, delivered the annual Phi Chi Lecture at the Medical College of Virginia, Richmond, on May 9, on "The Nonspecificity of the Electrocardiogram Associated with Coronary Artery Disease."

Dr. Clarke Appointed Fulbright Professor.—Dr. Charles Walter Clarke, executive director, American Social Hygiene Association, has been appointed a Fulbright professor and will teach the 1952-1953 school year at the University of the Philippines, Manila. Dr. Clarke, who joined the American Social Hygiene Association at its inception in 1914, has served successively as field secretary, European representative, medical director, and executive director. He has served as field representative for the League of Nations and director of health education for the League of Red Cross Societies, with headquarters in Geneva, as consultant to the U. S. Office of Indian Affairs and the New York State Department of Health, and has been vice-president of the National Health Council, member of the National Research Council's committee on venereal diseases, and associate editor of the *American Journal of Syphilis, Gonorrhea and Venereal Diseases.*

MICHIGAN

Fluoride Applications to Children's Teeth.—Sodium fluoride applications to prevent tooth decay will be given to approximately 12,000 children in 68 communities in the state this summer in a special self-supporting program under the auspices of the Michigan Department of Health and utilizing the services of 23 junior dental and dental hygiene students from the University of Michigan. Children in the participating communities will be offered the protective treatments at a minimal charge, which will be used to defray living expenses of the university students and to purchase supplies. Children not able to pay may receive the treatment free.

Annual Conference on Aging.—"Housing the Aging" is the topic for the University of Michigan Fifth Annual Conference on Aging to be held in Ann Arbor, July 24-26. The conference will consider the housing needs of healthy, chronically ill, confused, and disabled older persons. Co-sponsors of the conference include the Institute for Human Adjustment, schools of architecture, business administration, social work, and public health and the Medical School, Extension Service, and summer session of the University of Michigan; the Michigan State Medical Society; the Committee on Aging and Geriatrics of the Federal Security Agency, Washington, D. C.; and the Housing and Home Finance Agency, Washington, D. C. Conference registration materials may be obtained by writing to Wilma Donahue, Ph.D., Institute for Human Adjustment, Rm. 1510, Rackham Bldg., Ann Arbor.

MINNESOTA

Cancer Control Award.—Dr. Elexious T. Bell, emeritus professor of pathology at the University of Minnesota Medical School, Minneapolis, was recently presented with a medal and citation by the Minnesota Division of the American Cancer Society for his outstanding service in cancer control. Dr. Bell, who joined the university faculty in 1910 and retired as chief of the department of pathology in 1949, is continuing his research in the university laboratory.

MISSOURI

Evarts Graham Honored.—Washington University, St. Louis, on June 11 awarded an honorary degree of doctor of laws to Dr. Evarts A. Graham, now professor emeritus, who for 32 years was Bixby Professor of Surgery at the university. Dr. Graham was cited as "the first physician to cure successfully a patient with cancer of the lung by a one-stage removal of the diseased lung," and for opening "an entirely new approach to the diagnosis of disease through his method of visualizing the gallbladder."

NEW YORK

Blood Banks Association Election.—At its first annual meeting May 12 in New York the Blood Banks Association of New York State elected Dr. Jacob Geiger, Manhattan, president; Dr. Ernest Witebsky, Buffalo, vice-president; Dr. Morris Maslon, Glens Falls, treasurer; and Dr. Robert S. Jenks, Batavia, secretary.

County Survey of Medical Resources.—The Suffolk County Medical Society has announced a plan for a county-wide survey of medical resources. The survey, conducted by the public relations committee, of which Dr. Wilhelm G. Hansen, Babylon, is chairman, will attempt to ascertain (1) how medical facilities in Suffolk County compare with similar areas throughout the country; (2) how to improve local medical facilities where necessary; and (3) how to insure that existing medical facilities are used most efficiently.

State Medical Election.—At its annual meeting in New York May 12-16 the Medical Society of the State of New York elected Dr. Edward T. Wentworth of Rochester president; Dr. Andrew A. Eggston, Westchester, president-elect; Dr. John L. Edwards, Hudson, vice-president; and Dr. Alfred P. Ingegno, Brooklyn, assistant secretary. Reelected were Drs. Walter P. Anderton, New York, secretary; Maurice J. Dattelbaum, Brooklyn, treasurer; Thomas M. d'Angelo, Flushing, assistant treasurer; Frederic W. Holcomb, Kingston, speaker of the house of delegates; and Frederick W. Williams, New York, vice-speaker.

New York City

Personals.—Dr. William C. Spring Jr., recently appointed DeLamar Professor of Public Health Practice at Columbia University School of Public Health, has resigned as commissioner of health of the Tompkins County Department of Health, Ithaca, which he organized in 1947.——Dr. Leonard J. Goldwater, professor of occupational medicine, School of Public Health, Columbia University, is spending three months in Europe as a consultant for the World Health Organization. He will advise governmental and educational agencies in Yugoslavia and Finland, and will return to Columbia in September.

Van Etten Hospital.—The cornerstone was laid for the Nathan B. Van Etten Hospital at Pelham Parkway and Eastchester Road on May 13. This tuberculosis hospital is the first unit of the Bronx Municipal Hospital Center. Dr. Van Etten, in whose honor the hospital is named, was President of the American Medical Association in 1940-1941. In delivering the principal address at the ceremony, Dr. Abraham J. Fleischer, president of the Bronx County Medical Society, referred to Dr. Van Etten as, "Eighty-six years old, 60 years in medicine, humanitarian, philanthropist, churchman, doctor, teacher, organizer of hospitals, first president of the Bronx County Medical Society, past president of the Medical Society of the State of New York, the only Bronx physician to attain the high office of President of the American Medical Association, still working, still looking to the dawn of tomorrow for a healthier, better world."

TENNESSEE

Tribute to Dr. Leake.—In appreciation of Dr. Nolan E. Leake's 31 year association with the Baptist Memorial Hospital, Memphis, the staff recently presented him with an automobile. Dr. Leake came to the hospital as pathologist in 1921. Since January of this year he has been on the staff of physicians at the Mid-South Blood Center, while continuing at the hospital as pathologist emeritus.

Flies and Poliomyelitis.—Dr. Charles D. Boyd, research fellow in virus diseases at Baylor University College of Medicine, Houston, is said to have shown that flies caught in the Houston area in April carried the polio virus. As a result the city and county officials and health leaders have planned a sustained campaign against flies. Dr. Boyd's research is said to have revealed that the flies were polio virus carriers at a time when there was no epidemic of polio in that community.

VIRGINIA

Alumni Dinner.—The annual Medical College of Virginia Alumni dinner will be held at The Greenbrier in White Sulphur Springs, W. Va., July 24, during the annual meeting of the West Virginia State Medical Association. Guest speakers will be Dr. H. Hudnall Ware, Richmond, president of the alumni association, and Dr. John B. Truslow, dean of the School of Medicine, Medical College of Virginia, Richmond. According to Dr. John T. Jarrett, Charleston, president of the West Virginia Alumni chapter, there will be no charge for the dinner other than the prevailing American plan rate paid by all registered guests. The social hour will be on a subscription basis, with tickets available at $2.50 per person at the registration desk.

WASHINGTON

Course for Medical Secretaries.—Beginning with the 1952 fall semester, Holy Names College, Spokane, will inaugurate a two year college course for medical secretaries. Anyone interested may contact Sister Frances Zavier at the college administration office.

WEST VIRGINIA

Regional Meeting of College of Physicians.—The first regional meeting of the West Virginia Chapter of the American College of Physicians to be held in the state will convene July 25 at the Greenbrier Hotel in White Sulphur Springs, with Dr. Paul H. Revercomb of Charleston presiding. The subject of "space medicine" will be discussed by the newly installed president of the American Medical Association, Dr. Louis H. Bauer of Hempstead, N. Y. Dr. Charles M. Caravati, Richmond, assistant professor of clinical medicine at the Medical College of Virginia, Richmond, will speak on "Jaundice, Its Clinical Interpretation," and Dr. Alphonse McMahon, associate professor of internal medicine, St. Louis University School of Medicine, will discuss hypercholesterolemia. Dr. T. Grier Miller, Philadelphia, president of the American College of Physicians, will deliver the principal address at the dinner.

Community Health Councils.—The West Virginia Public Health Association has adopted as its main project for 1952-1953 the promotion of community health councils. The project committee, which will serve in an advisory capacity to local groups, consists of Fred J. Holter, Ph.D., Morgantown, recently appointed health education consultant to the state department of health; Dr. William H. Riheldaffer, Charleston, United Mine Workers area medical administrator, and Mr. H. A. Stroud, Fairmont, of the division of public relations, Monongahela Power Company. Mr. Charles Lively, Charleston, executive secretary of the West Virginia State Medical Association, was named consultant to the group.

The services of Dr. Holter, as health education consultant, are available on a part-time basis to areas requesting information concerning the development of community health councils. Community health councils have already been organized in Mingo, Monongalia, and McDowell counties.

WYOMING

State Medical Meeting and Election.—The Wyoming State Medical Society held its annual meeting and election at Lander June 5-7, under the presidency of Dr. Paul R. Holtz of Lander. Out-of-state speakers included Drs. Kenneth C. Sawyer, Charles G. Freed, George P. Lingenfelter, Daniel R. Higbee, and Henry M. Morfit, Denver; Drs. George B. Ely and Preston R. Cutler, Salt Lake City; Dr. Evan W. Thomas, New York; and Dr. Charles McLaughlin, Omaha. On Thursday the following officers were elected: Dr. Edward J. Guilfoyle, Newcastle, president; Dr. James W. Sampson, Sheridan, president-elect; Dr. Bernard J. Sullivan, Laramie, vice-president; Dr. Peter M. Schunk, Sheridan, treasurer; Dr. Glenn W. Koford, Cheyenne, secretary; Dr. W. Andrew Bunten, Cheyenne, delegate to the American Medical Association; Dr. George H. Phelps, Cheyenne, alternate delegate to the American Medical Association; and Mr. Arthur Abbey, Cheyenne, executive secretary.

GENERAL

Society Elections.—At the annual meeting of the American Diabetes Association in Chicago, June 7-8, Dr. Frank N. Allan, Boston, was elected president; Dr. John A. Reed, Washington, D. C., secretary; and Dr. William H. Olmsted, St. Louis, treasurer.——At the annual meeting of the Society for Investigative Dermatology, held in Chicago, June 7-8, Dr. Theodore Cornbleet, Chicago, was elected president and Dr. Walter C. Lobitz Jr., Hanover, N. H., vice-president.

Congress on Chest Diseases.—The Twelfth Congress of the International Union Against Tuberculosis and the Second International Congress on Diseases of the Chest, sponsored by the Council on International Affairs, American College of Chest Physicians, will be held in Rio de Janeiro, Brazil, Aug. 24-30 under the presidency of Prof. Manoel de Abreu, Rio de Janeiro. The program lists 42 papers, and names 29 participants from the United States. The Council on International Affairs of the College and a number of committees serving under the council will meet in Rio de Janeiro during the week of the congresses. The governors and regents of the college will also hold their biannual meeting at that time. Following the close of the congresses in Rio de Janeiro there will be a tour of São Paulo, Brazil, where a program is being arranged by the South Brazilian Chapter of the college.

A scientific program on diseases of the chest will be presented on the airplane as persons attending are flying to Rio de Janeiro. Arrangements for this flying congress have been made with Pan American World Airways on their stratocruiser "El Presidente," leaving New York Aug. 21 at 11 a. m. Actual flying time to Rio de Janeiro is 19 hours. The round trip fare, New York City to Rio de Janeiro, is $848. A limited number of sleeping berths are available at a cost of $15 each way.

Outbreaks of Communicable Diseases.—According to the U. S. Public Health Service, the following outbreaks of communicable diseases have been reported for the week ended May 31:

Rocky Mountain Spotted Fever.—Thirteen cases of Rocky Mountain spotted fever were reported, all in the South Atlantic and Mountain States. The largest number, 5, was in Virginia, and 2 cases each occurred in North Carolina, Idaho, and Wyoming. Single cases were reported in Maryland and Colorado. The first fatal case of Rocky Mountain spotted fever in Minnesota has been reported in an 8-year-old boy.

Colorado Tick Fever.—An outbreak of illness has been reported among a group of Basque sheepherders in Elko County, Nev. The clinical diagnosis was Colorado tick fever in six persons and Rocky Mountain spotted fever in two others. Two cases of Colorado tick fever have been confirmed and one case of Q fever was also diagnosed. Investigation has not yet been completed.

Typhoid.—Preliminary report has been made of an outbreak of typhoid in Tioga County, New York, about the middle of May. The incident occurred among 19 persons who ate at a restaurant.

Gastroenteritis.—The Massachusetts Department of Public Health reports an outbreak of food poisoning among five persons about three and one-half hours after they had eaten custard-cream-filled tarts and cream puffs. Laboratory examination showed Staphylococcus aureus in the food.

Poliomyelitis Report.—A total of 421 cases of poliomyelitis was reported in the United States for the week ended June 21. This represents an increase of 43% over the number of cases (295) for the previous week. More than half of this increase was attributed to the increase in Texas, from 103 cases to 146; California, 40 to 53; Ohio, 7 to 18; New York, 5 to 15; and Iowa, 8 to 16. The incidence decreased slightly in Louisiana and Florida, from 18 to 17 cases and 15 to 12 cases, respectively. In Mississippi the increase was from 15 to 21 cases. The cumulative total of poliomyelitis cases for the "disease year" is 1,780 as compared with 1,190 for the corresponding period last year. Since the seasonal low week late in March through the week ended June 14, Texas has reported 467 cases, of which 92 were in Harris County. For the corresponding period last year this county reported 36. There are four other counties in Texas that show an increase over the number for last year during this period. They are as follows (1951 figures in parentheses): Bexar, 36 (12); Dallas, 31 (12); Jefferson, 23 (7); and Webb, 13 (1). Two counties, Nueces, 34 (40), and Tarrant, 18 (21), reported fewer cases for this period than for last year. Although the figures are not available for the counties in California the indications are that the cumulative total since the low week through the week ended June 14 will be lower than the 76 cases for this period in 1951. In Florida, Louisiana, and Mississippi, where large numbers of cases have been reported for the past few weeks, there is no indication as yet of any concentration of cases. For the other states reporting large numbers for the week ended June 21 the county breakdown will not be available until later.

LATIN AMERICA

Public Health Meeting.—The First Inter-American Congress of Public Health will be held at the Valdés Rodríguez School, Havana, Cuba, Sept. 26 to Oct. 1 to commemorate the 50th anniversary of the Pan-American Sanitary Bureau and to pay homage to Carlos J. Finlay.

On Monday at 2:30 p. m. there will be a symposium on yellow fever. On Tuesday four symposiums will be held on public health education, rabies and brucellosis, tuberculosis, and maternal and child health. On Wednesday roundtables will be held on malaria, chagas disease, schistosomiasis, and onchocerciasis.

Hematology Conference.—The International Congress of Hematology will meet in Mar del Plata, Argentina, Sept. 21-28 under the presidency of Dr. Alfredo Pavlovsky, Buenos Aires. The sessions will be preceded by a preliminary meeting, Sept. 20, in the National Academy of Medicine, Melo 3081, Buenos Aires. The day will be devoted to symposiums on hemophilia, and roundtable discussions. A reception will be held in the evening by the Argentine Society of Hematology and Hemotherapy. On Sunday a special train will take members of the congress on the six hour trip to Mar del Plata. Sunday evening a dinner dance will be held at the Hotel Provincial after formal opening of the congress. Subjects to be discussed during the sessions are as follows:

Neuroendocrine Regulation of Hematopoiesis and Hemostasis.
Polycythemia.
Leukemias, Etiology and Treatment.
Radiation Injury to the Hemopoietic Organs and Hemostasis.
Histochemistry and Cellular Ultrastructure.
Diagnosis of the Hemolytic Disease. Treatment of the Hemolytic Disease of the Newborn. Relations Between Immunology and Hematology.

The Hotel Provincial will be the official headquarters of the delegates and members of the society. Headquarters of the congress are at Anchorena 1710, Buenos Aires, Argentina. The secretary-treasurer is Dr. Carlos Reussi, Venezuela 1580, Buenos Aires, Argentina.

FOREIGN

Geographical Pathologists Meet in Belgium.—The International Conference of Geographical Pathology will be held in Liège, Belgium, July 15-18 under the presidency of Prof. J. Firket. The following program will be given:

F. O. Mac Callum, London, Hepatitis—Epidemiology.
Bernard A. Briody, New Haven, Conn., Viral Hepatitis.
A. Werthemann, Basel. General Report on Pathology of Subacute and Chronic Hepatitis Including Endemic Malignant Hepatitis.
F. Buchner, Freiburg i. Br., Pathology of Uncomplicated Reversible Virus Hepatitis.
S. Sherlock, London, Biochemical Aspects of Acute Hepatitis.
C. E. De Langen, Utrecht, Clinical Aspects of Hepatitis.
R. Cachera, Paris, Clinic on Hepatitis.
R. Jaffe, Caracas, Hepatitis Parasitaria.
S. Rubarth, Stockholm, Hepatitis in Veterinary Medicine.

The secretary of the conference is Dr. H. Betts, Institut de Pathologie, 1 rue des Bonnes, Villes, Liège, Belgium. Rooms can be booked in hotels either through the nearest Cook Travel Agency or at Wagons-Lits Cook, 43 Rue Pont d'Ile, Liège.

MEETINGS

Alaska Territorial Medical Association, Anchorage, Aug. 21-23. Dr. William P. Blanton, P. O. Box 2569, Juneau, Secretary.

American Congress of Physical Medicine, Roosevelt Hotel, New York, Aug. 25-29. Dr. Frances Baker, One Tilton Ave., San Mateo, Calif., Secretary.

National Medical Association, Chicago, Aug. 11-15. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

Nevada State Medical Association, Reno, Aug. 21-23. Dr. William A. O'Brien III, 505 Chestnut St., Reno, Secretary.

Post Graduate Medical Assembly of South Texas, Shamrock Hotel, Houston, July 21-23. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secretary.

Reno Surgical Society Conference, Reno, Nevada, Aug. 21-23. Dr. Olin C. Moulton, 130 N. Virginia St., Reno, Nevada, Chairman.

Rocky Mountain Cancer Conference, Shirley-Savoy Hotel, Denver, July 9-10. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver 2.

Rocky Mountain Radiological Society, Denver, Aug. 7-9. Dr. Maurice D. Frazer, 1037 Stuart Bldg., Lincoln, Neb., Secretary.

West Virginia State Medical Association, The Greenbrier, White Sulphur Springs, July 24-26. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

INTERNATIONAL

American Congress on Industrial Medicine, Rio de Janeiro, Brazil, Sept. 20-28.

Australasian Medical Congress, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, General Secretary.

Commonwealth and Empire Health and Tuberculosis Conference, Central Hall, London, England, July 8-13. Dr. J. H. Harley Williams, Tavistock House North, Tavistock Sq., London, W.C.1, England, Secretary General.

Congress of the International Diabetes Federation, Leyden, Netherlands, July 7-12. Dr. F. Gerritzen, 33, Prinsegracht, The Hague, Netherlands, Secretary.

European Congress of Cardiology. University of London, Bloomsbury, W.C.1, England, Sept. 10-12. Dr. K. Shirley Smith, 35 Wimpole St., London, W.1, England, Secretary.

European Society of Cardiovascular Surgery, Strasbourg, France, Oct. 3-4. Sir James Learmonth, Department of Surgery, University New Buildings, Edinburgh 8, Scotland.

Interamerican Cardiological Congress, Buenos Aires, Argentina, Aug. 31-Sept. 7. Dr. Blas Moia, Larrea 1132, Buenos Aires, Argentina, Secretary-General.

Inter-American Congress of Public Health, Havana, Cuba. Sept. 27-Oct. 1. Pan-American Sanitary Bureau, 2001 Connecticut Ave., Washington, D. C.

Inter-American Congress of Radiology, Mexico City, Mexico, Nov. 2-8. Dr. Guido Torres Martinez, Marsella No. 11, Mexico, D.F., Secretary-General.

International Congress of Biochemistry, Paris, France, July 21-27. Prof. Jean Courtois, 4, Avenue de l'Observatoire, Paris 6ᵉ, France, Secretary.

International Congress of Dermatology and Syphilology, London, England, July 21-26. Dr. Gordon B. Mitchell-Heggs, 5, Lisle St., London, W.C.2, England, General Secretary.

International Congress of Dietetics, Royal Tropical Institute, Amsterdam, The Netherlands, July 7-11. Miss Diane J. Ten Haaf, Educational Bureau of the Nutritional *Council*, 42 Koninginnegracht, The Hague, Netherlands, General Secretary.

International Congress on Diseases of the Chest, Rio de Janeiro, Brazil, Aug. 24-30. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

International Congress of Haematology, Mar del Plata, Argentina, Sept. 21-26. Dr. Carlos Reussi, Anchorena 1710, Buenos Aires, Argentina, *Secretary*.

International Congress of the History of Medicine, Nice-Cannes, France, and Monaco, Sept. 8-14. Dr. F. A. Sondervorst, 124 Avenue des Allies, Louvain, Belgium, Secretary-General.

International Congress on Hydatid Disease, Santiago, Chile, Nov. 21-24. Organizing Committee, P. O. Box 9183, *Santiago*, Chile.

International Congress of Internal Medicine, *Friends House*, London, N.W.1, Eng. Sept. 15-18. *Sir Harold* Boldero, 12 Pall Mall East, London, S.W.1, England, Secretary.

International Congress on Medical Records, London, England, Sept. 7-12. Miss Gwen Perkins, 120 C Street S.E., Washington, D. C., Chairman.

International Congress of Military Medicine and Pharmacy, Montevideo, Uruguay, March 1-7. Dirreccion General del Servico de Sanitad Militar, 8 de Octubre y *Mariano* Moreno, Montevideo, Uruguay, Secretariat of the Congress.

International Congress on Neuropathology, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

International Congress of Otorhinolaryngology, Amsterdam, Netherlands, June 8-15. Dr. W. H. Struben, J. J. Viottastraat 1, Amsterdam, Netherlands, Secretary.

International Congress of Physical Medicine, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, *England*, Hon. Secretary.

International Congress of Physiopathology of Animal Reproduction and Artificial Insemination, Copenhagen, Denmark, July 7-10. Prof. Ed. Sorensen, The Royal Veterinary and Agricultural College, Bülowsvej 13, Copenhagen V, Denmark.

International Congress of Urology, The Waldorf-*Astoria*, *New York*, N. Y., U. S. A., *Sept. 15-18. Dr. John A. Taylor*, 2 East 54th St., New York, N. Y., U. S. A., Secretary-General.

International Hospital Congress, London, England, May 25-30. Capt. J. E. *Stone*, 10 Old Jewry, London, EC2, England, Hon. Secretary.

International Neurological Reunion, Paris, France, July 8-9. M. Jean Sigwald, *68 Boulevard de Courcelles*, Paris 17e, France.

International Society of Geographic Pathology, Liège, *Belgium*, July 15-18. Dr. Fred C. Roulet, Habelstr. 24, *Basel*, *Switzerland*, *Secretary General*.

International Union Against Tuberculosis, Rio de Janeiro, Brazil, Aug. 24-27. *Prof. Etienne Bernard*, 66 Blvd. St. Michel, Paris 6e, France, Secretary-General.

Neuroradiologic Symposium, *Stockholm*, *Sweden*, *Sept.* 17-20. Docent Ake Lindbom, *Symposium* Neuroradiologicum, *Serafimerlasarettet*, Stockholm K., *Sweden*, *Secretary*.

World Congress of Jewish Physicians, Jerusalem, Israel, Aug. 10-14. Secretariat: % Israel Medical Association, Rehov Mesilat Yesharim, *Beth Kovatz*, *Jerusalem*, Israel.

World Congress of Medicine, Montecatini, Italy, Oct. 16-18. Secretariat: Corso Trieste, 65, Rome, Italy.

World Federation of Mental Health, Brussels, Belgium, Aug. 25-Sept. 1.

World Medical Association, Athens, Greece, Oct. 12-16. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary General

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

Alaska:* *Examination.* Juneau. On application in other towns where there are board members. *Reciprocity.* On application. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

Arizona:* *Examination.* Phoenix, July 15-17. *Reciprocity.* July 19. Sec., Dr. J. H. Patterson, 316 W. McDowell St., Phoenix.

California: *Written.* Los Angeles, Aug. 18-21; Sacramento, Oct. 20-23. Application must be received at least two weeks prior to date of examination. *Oral for Reciprocity Applicants.* Los Angeles, Aug. 16; San Francisco, Nov. 8. Applicants are requested not to arrange to come to an oral examination until they receive notice from the Credentials Committee. *Oral and Clinical for Foreign Medical School Graduates.* Los Angeles, Aug. 17; San Francisco, Nov. 9. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento.

Colorado:* *Reciprocity.* Denver, July 8. Applications accepted through June 9. Sec., Dr. Samuel H. Brown, 831 Republic Bldg., Denver.

Connecticut:* *Regular. Examination.* Hartford, July 8-9. Sec. to the Board, Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, July 8-9. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: Dover, July 8-10. Sec., Dr. Joseph S. McDaniel, 229 South State St., Dover.

Guam: The Commission on Licensure will meet whenever a candidate appears or submits *his credentials*. Ex. Sec., Dr. Austin W. Matthis, Agana.

Hawaii: *Examination.* Honolulu, July 14-17. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

Idaho: Boise, July 14-16. *Sec.*, Mr. Armand L. *Bird*, *305 Sun* Bldg., Boise.

Illinois: *Examination.* Chicago, Sept. 23-25. *Supt.* of Regis., Mr. Charles F. Kervin, Capitol Bldg., Springfield.

Maine: Augusta, July 8-9. *Sec.*, Dr. Adam P. Leighton, 192 *State St.*, Portland.

Massachusetts: Boston, July 8-11. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston.

Missouri: *Reciprocity.* Jefferson City, July 27. Ex. Sec., Mr. John A. Hailey, Box 4, *State* Capitol Bldg., Jefferson City.

Montana: Helena, Oct. 6-8. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

Nevada:* Carson City, Aug. 4. *Sec.*, Dr. George H. Ross, *112 Curry St.*, Carson City.

New Hampshire: Concord, *Sept.* 10. *Sec.*, Dr. John S. Wheeler, 107 *State* House, Concord.

North Carolina: *Reciprocity.* Raleigh, Aug. 2. *Sec.*, Dr. Joseph J. Combs, 419 *Professional* Bldg., Raleigh.

North Dakota: *Examination.* Grand Forks, *July* 9-11. *Reciprocity.* Grand Forks, *July* 12. *Sec.*, Dr. *C. J.* Glaspel, Grafton.

Oregon:* *Examination.* Portland, July 7-9. *Reciprocity.* Portland, July 25-26. Final date for filing application was June 16. Exec. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

Pennsylvania: *Examination.* Philadelphia and Pittsburgh, July 8-10. Acting Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

Rhode Island: *Examination.* Providence, July 2-3. Administrator of Professional Regulations, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota:* Rapid City, July 15. Sec., Dr. C. B. McVay, Yankton Clinic, Yankton.

Texas: *Reciprocity.* Fort Worth, Aug. 3. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth.

Utah: *Examination.* Salt Lake City, July 9-11. *Reciprocity.* Salt Lake City, June 20. Asst. Dir., Mr. Frank E. Lees, 314 State Capitol Bldg., Salt Lake City 1.

Washington:* *Seattle*, *July* 14-16. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

West Virginia: Charleston, July 7-9. Sec., Dr. N. H. Dyer, State Office Bldg., No. 3, Charleston 5.

Wisconsin:* Milwaukee, July 8-10. Sec., Dr. A. G. Koehler, 46 Washington *Blvd.*, *Oshkosh*.

Wyoming: Cheyenne, *Oct.* 6. *Sec.*, Dr. Franklin D. Yoder, State Office Bldg., Cheyenne.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: *Examination.* On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

Colorado: *Examination.* Denver, Sept. 10-11. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

District of Columbia: *Examination.* Washington, Oct. 20-21. Sec., Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

Iowa: *Examination.* Des Moines, July 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Detroit and Ann Arbor, Oct. 10-11. Sec., Mrs. Anne Baker, 423 W. Michigan Ave., Lansing.

Nebraska: *Examination.* Omaha, Oct. 7-8. Director, Bureau of Examining Boards, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

Nevada: *Examination.* Reno, July 8. *Reciprocity.* On application. Sec., Mr. Frank Richardson, University of Nevada, Reno.

Oklahoma: *Examination.* Oklahoma City, Sept. 13. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: *Examination.* Portland, Sept. 6 and Dec. 6. Sec., Dr. Charles D. Byrne, State Board of Higher Education, University of Oregon, Eugene.

Rhode Island: *Examination.* Providence, Aug. 13. Administrator of Professional Regulations, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

Tennessee: *Examination.* Memphis, July 2-3. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

Texas: *Examination.* Austin, October. Sec., Brother Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

Washington: *Examination.* Seattle, July 9-10. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Wisconsin: *Examination.* Madison, Sept. 13, Milwaukee, Dec. 6. Sec., Mr. W. H. Barber, 621 Ransom St., Ripon.

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* Basic Science Certificate required.

DEATHS

Denton, William ⊕ Colonel, U. S. Army, retired, Port Jervis, N. Y.; born Sept. 19, 1885; Cornell University Medical College, New York, 1908; Army Medical School, 1911; entered the medical corps of the regular U. S. Army March 29, 1911, as a first lieutenant; served in World Wars I and II, having been awarded the Legion of Merit in the last war; in foreign service in France and England during World War I; served in the Philippines and Puerto Rico and at many posts in continental United States; rose through the ranks to that of colonel March 15, 1937; retired Aug. 31, 1946; died March 13, aged 66, of ruptured aneurysm and generalized arteriosclerosis.

Davis, Edward Lowndes, Berwick, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; served overseas during World War I; veteran of the Spanish-American War; a brigadier general in the Pennsylvania National Guard; an organizer of the National Guard in Berwick; the building known as Davis Armory was named for him at impressive ceremonies held on Nov. 19, 1938; member of the American Medical Association; past president and vice-president of the Columbia County Medical Society; affiliated with Berwick Hospital; died April 19, aged 77, of cerebral thrombosis.

Howes, William Edward ⊕ Honolulu, Hawaii; University of Michigan Medical School, Ann Arbor, 1919; member of the Medical Society of the State of New York, American Roentgen Ray Society, Radiological Society of North America, and the American College of Radiology; specialist certified by the American Board of Radiology; served during World War II; formerly practiced in Brooklyn, where he served on the staff of the Brooklyn Cancer Institute and Carson C. Peck Memorial and Lutheran hospitals; died April 4, aged 57, of embolism following an operation.

Adams, Edward Nolan, Tyler, Texas; University of Georgia Medical Department, Augusta, 1931; served during World War II; affiliated with Mother Frances Hospital; died April 5, aged 49, of coronary occlusion.

Anderson, Charles Willoughby, Bishop, Calif.; McGill University Faculty of Medicine, Montreal, Canada, 1903; died April 7, aged 72, of heart disease.

Angell, Charles Augustus, Des Moines, Iowa; Rush Medical College, Chicago, 1931; member of the American Medical Association; served during World War II; affiliated with Iowa Lutheran and Mercy hospitals; died April 13, aged 51, of coronary thrombosis.

Atkinson, Edward Broadus, Cane Valley, Ky.; Kentucky School of Medicine, Louisville, 1896; died April 25, aged 83, of cerebral hemorrhage.

Bard, George Percival, Crescent, Ga.; New York Homeopathic Medical College and Hospital, New York, 1900; formerly affiliated with Cyril and Julia C. Johnson Memorial Hospital in Stafford Springs, Conn.; died April 1, aged 79, of aortic insufficiency.

Basney, Sterling Custus ⊕ Wellsboro, Pa.; Medico-Chirurgical College of Philadelphia, 1910; past president of Tioga County Medical Association; on the staff of the Soldiers and Sailors Memorial Hospital; an examining physician of the Pennsylvania Railroad Company in Philadelphia; died April 1, aged 66, of brain tumor.

Black, Walter Wright, Oswego, Ore.; University of Oregon Medical School, Portland, 1916; specialist certified by the American Board of Proctology; member of the American Proctologic Society; formerly practiced in Portland, where he was affiliated with Emanuel Hospital; died in Friday Harbor, Wash., April 10, aged 66, of coronary occlusion.

Blanchard, Alexander Steven ⊕ Williston, S. C.; Medical College of Georgia, Augusta, 1914; served during World War I; mayor of Williston for three terms; died in Columbia April 8, aged 63, of perirectal abscess, diabetes mellitus and arteriosclerosis.

Boylan, Peter Clement ⊕ Cleveland Heights, Ohio; Jefferson Medical College of Philadelphia, 1927; served during World War II; affiliated with Huron Road Hospital in East Cleveland and St. Vincent Charity Hospital in Cleveland, where he died April 21, aged 54, of cirrhosis of the liver with esophageal varices and ulcerative colitis.

Brancheau, Lynus Theodore, Petersburg, Mich.; Wayne University College of Medicine, Detroit, 1936; member of the American Medical Association; served during World War II; died in Mercy Hospital, Monroe, April 20, aged 46, of carcinoma of the lung.

Burns, Thomas Francis ⊕ Fall River, Mass.; Jefferson Medical College of Philadelphia, 1912; served as city physician, chairman of the maternal and child health commission, and chairman of the board of health; affiliated with Fall River, Union, and St. Anne's hospitals; died April 23, aged 61, of cerebral hemorrhage and hypertension.

Burrage, Thomas Jayne, Portland, Maine; Harvard Medical School, Boston, 1903; member of the American Medical Association; served overseas during World War I; on the local Selective Service Board during World War II; died in Maine General Hospital April 18, aged 76.

Campbell, Oscar Clayman, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1898; died in the Graduate Hospital of the University of Pennsylvania April 14, aged 75, of heart disease.

Clark, Martha E., Omaha; the Hahnemann Medical College and Hospital, Chicago, 1897; died April 11, aged 95, of a fractured hip.

Convery, Robert Ambrose, Bradley Beach, N. J.; Harvard Medical School, Boston, 1926; died in Pine Haven Sanitarium in Pinewald March 16, aged 54, of cerebral embolism and arteriosclerosis.

Conway, Francis, St. Louis; St. Louis College of Physicians and Surgeons, 1921; member of the American Medical Association; served during World War I; died in Veterans Administration Hospital, Jefferson Barracks, Mo., April 4, aged 62, of carcinoma of the right kidney with metastasis to the liver.

Corley, John Percell, Greensboro, Ala.; University of the South Medical Department, Sewanee, Tenn., 1899; also a dentist; died recently, aged 82, of coronary thrombosis and arterial hypertension.

Crane, Ralph William, Stamford, Conn.; Yale University School of Medicine, New Haven, 1905; member of the American Medical Association; past president of the Fairfield County Medical Society; medical examiner; formerly town health officer; served as director of contagious service, secretary to medical staff, member of the medical board, and member of attending medical staff, Stamford Hospital, where he died April 1, aged 70, of cerebral embolism.

Darvas, Nicholas, New York; Deutsche Universität Medizinische Fakultät, Prague, Czechoslovakia, 1922; died April 21, aged 55.

Dixon, Guy E., Hendersonville, N. C.; St. Louis College of Physicians and Surgeons, 1903; member of the American Medical Association; died recently, aged 74, of uremia and chronic nephritis.

Dubbs, Robert Lovine ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1901; died in Jefferson Hospital March 26, aged 81.

⊕ Indicates Fellow of the American Medical Association.

Dux, Henry M., Jacksonville, Fla.; College of Medicine and Surgery (Physio-Medical), Chicago, 1911; president of the Dux Chemical Works; died in St. Antonio, March 18, aged 71, of coronary heart disease.

Eagan, Robert Lester, La Crosse, Wis.; Marquette University School of Medicine, Milwaukee, 1915; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; past president of the Seventh District Medical Society; served during World War I; affiliated with St. Francis and Grandview hospitals; died April 4, aged 61, of coronary occlusion and arteriosclerosis.

Ellison, Thomas, Philadelphia; Jefferson Medical College of Philadelphia, 1903; died April 16, aged 78, of carcinoma of the colon.

Ervin, William Lindley, Inverness, Miss.; Memphis (Tenn.) Hospital Medical College, 1903; member of the American Medical Association; died April 16, aged 75, of carcinoma of the liver.

Fagan, Frank D., Gove, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1906; county health officer; died April 9, aged 74, of heart disease.

Farnum, Charles George ⊕ Peoria, Ill.; Rush Medical College, Chicago, 1901; past president of the Peoria County Medical Society and first vice-president of the Illinois State Medical Society; member of the Industrial Medical Association; formerly associate editor of the *Peoria Medical Journal*; died in the Methodist Hospital April 25, aged 75.

Finlayson, Alan Daniel ⊕ Cleveland; University of Vermont College of Medicine, Burlington, 1910; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychoanalytic Association and the American Psychiatric Association; on the faculty of Western Reserve University; served during World War I; on the staff of the Lakeside Hospital; died April 23, aged 71, of cerebral hemorrhage.

Fisher, Ray Homer ⊕ Oakland, Calif.; University of Colorado School of Medicine, Denver, 1909; served on the staff of the East Oakland Hospital; died April 25, aged 69, of coronary heart disease.

Flynn, William Anthony, Amesbury, Mass.; Tufts College Medical School, Boston, 1923; served during World War I; a member of the board of health; a member of the staff of the Amesbury Hospital, of which he had been a member of the board of trustees; affiliated with Anna Jaques Hospital in Newburyport; died April 12, aged 54, of coronary occlusion.

Freeman, Charles Doney, St. Paul; University of Minnesota College of Medicine and Surgery, Minneapolis, 1904; specialist certified by the American Board of Dermatology and Syphilology; member of the American Medical Association and the American Dermatological Association; emeritus assistant professor of dermatology at his alma mater, now known as the University of Minnesota Medical School; served on the staffs of Charles T. Miller, St. Joseph's, and St. Luke's hospitals; died April 18, aged 73, of lymphatic leukemia and hypertension.

Garner, James S., Rome, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1908; affiliated with McCall Hospital; died April 16, aged 73, of arteriosclerotic heart disease.

Garson, Rudolph Ronald ⊕ Brooklyn; Medizinische Fakultät der Universität, Wien, Austria, 1924; died recently, aged 55, of bronchogenic carcinoma.

Gazda, Joseph A. ⊕ Chicago; Chicago College of Medicine and Surgery, 1913; died in Laguna Beach, Calif., April 8, aged 70.

Gillaspie, William Augustus, New Orleans; University of Missouri School of Medicine, Columbia, 1896; Medical Department of Tulane University of Louisiana, New Orleans, 1900; affiliated with Hotel Dieu, Sisters' Hospital, where he died April 4, aged 78, of acute pyelonephritis and arteriosclerotic heart disease.

Goglia, Alfred Antonio ⊕ Boston; College of Physicians and Surgeons, Boston, 1936; served during World War II; died March 22, aged 43, of coronary thrombosis.

Gorrell, Talbot John H., Coral Gables, Fla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; member of the American Medical Association, Illinois State Medical Society, and the American Academy of Ophthalmology and Otolaryngology; died in Miami April 14, aged 79, of pneumonia.

Hardin, Julia Helen ⊕ Merion, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1904; emeritus professor of anesthesia at her alma mater; member of the American Society of Anesthesiologists; died in the Woman's Hospital April 12, aged 72, of coronory occlusion.

Hassell, Lyle Leland, Conway, Ark.; University of Arkansas School of Medicine, Little Rock, 1931; member of the American Medical Association; served during World War II; formerly director of the Faulkner County health unit; died March 2, aged 47.

Hatteroth, William Henry Carl, Oakland, Calif.; Cooper Medical College, San Francisco, 1903; member of the American Medical Association; on the staff of the Permanente Hospital; died April 18, aged 72.

Hendley, Roy Lawrence, Cross Plains, Tenn.; Vanderbilt University School of Medicine, Nashville, 1937; affiliated with Robertson County Hospital in Springfield; died March 15, aged 42, of hypertension and coronary thrombosis.

Hopkins, William Benjamin, Tampa, Fla.; University College of Medicine, Richmond, 1907; member of the American Medical Association; served during World War I; affiliated with Tampa Municipal Hospital, where he died April 27, aged 68, of cerebral hemorrhage.

Houser, Charles Dorsey, Baker, Ore.; University of Oregon Medical School, Portland, 1914; member of the American Medical Association; affiliated with St. Elizabeth Hospital; died April 4, aged 64, of carcinoma of the rectum.

Inches, James W., Detroit; Detroit College of Medicine, 1896; formerly police commissioner and city health commissioner; at one time mayor of St. Clair, Mich.; died in Marion, Pa., March 29, aged 91.

Irving, George Russell, New York; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1912; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; served during World War I; affiliated with St. Luke's and New York City hospitals; died in Columbia-Presbyterian Medical Center April 14, age 61.

Jaeger, Gern William ⊕ Niagara Falls, N. Y.; University of Buffalo School of Medicine, 1937; served during World War II; died recently, aged 42, of portal cirrhosis and acute yellow atrophy of the liver.

Johnson, Grover Erman ⊕ McLeansboro, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; fellow of the American College of Surgeons; formerly practiced in Chicago, where he was affiliated with Evangelical Hospital; died April 25, aged 67.

Jones, Thomas Spec, Baton Rouge, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1906; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with Our Lady of the Lake Sanitarium; died recently, aged 70.

Kaiden, Maxwell Harris ⊕ New York; University and Bellevue Hospital Medical College, New York, 1911; specialist certified by the American Board of Otolaryngology; formerly adjunct professor of otology at the New York Polyclinic Medical School and Hospital; affiliated with the Home and Hospital of the Daughters of Israel; died April 9, aged 65.

Keagy, Charles A., Hanover, Pa.; Baltimore Medical College, 1902; died March 26, aged 77.

Kempton Rockwell M. ⊕ Saginaw, Mich.; University of Michigan Medical School, Ann Arbor, 1918; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; fellow of the American College of Physicians; past president of the Saginaw County Medical Society; chief of pediatrics, Saginaw General and St. Mary's hospitals; died April 5, aged 63.

Klein, Abraham, Brooklyn, Long Island College Hospital, Brooklyn, 1908; fellow of the American College of Physicians; specialist certified by the American Board of Internal Medicine; medical adviser for the draft boards during World War I and II; consulting physician, Greenpoint Hospital; died April 27, aged 67.

Knapp, George LeRoy, Ticonderoga, N. Y.; University of Vermont College of Medicine, Burlington, 1905; member of the American Medical Association; past president of the Essex County Medical Society; on the staff of the Moses Ludington Hospital, where he died March 23, aged 71, of coronary occlusion.

Kramps, Herbert William Joseph, Chicago; Loyola University School of Medicine, Chicago, 1932; member of the American Medical Association; affiliated with St. Elizabeth Hospital, where he died April 23, aged 44, of bronchopneumonia and chronic nephritis.

Lahmers, Frederick, Akron, Ohio; Baltimore Medical College, 1898; formerly practiced in Barberton, where he was health officer, and affiliated with Citizens Hospital; died in City Hospital March 29, aged 79, of arteriosclerotic heart disease.

Larson, Clarence Benjamin, Bigfork, Mont.; Northwestern University Medical School, Chicago, 1921; died in Missoula March 21, aged 60, of coronary thrombosis.

Leake, John Phillips, St. Francisville, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1901; fellow of the American College of Surgeons; formerly practiced in New Orleans, where he was affiliated with Touro Infirmary, and associate professor of otolaryngology at the Tulane Post Graduate School of Medicine; died recently, aged 80, of coronary thrombosis.

Loebell, Maurice A. ⊕ Zanesville, Ohio; Jenner Medical College, Chicago, 1912; specialist certified by the American Board of Radiology; member of the Radiological Society of North America; served during World War I; affiliated with Bethesda Hospital, where he died March 17, aged 69.

Lynch, William Francis ⊕ Worcester, Mass.; Harvard Medical School, Boston, 1908; member of the founders group of the American Board of Surgery; member of the New England Surgical Society; fellow of the American College of Surgeons; affiliated with St. Vincent Hospital; died May 2, aged 72, of coronary occlusion.

McCormick, Robert Roy ⊕ Endicott, N. Y.; McGill University Faculty of Medicine, Montreal, Canada, 1922; affiliated with Ideal Hospital; died in Sunnybrook Hospital, Toronto, Canada, April 26, aged 59, of subarachnoid hemorrhage.

McCullough, James Morton ⊕ Rodeo, Calif.; Oakland College of Medicine and Surgery, 1918; member of the Industrial Medical Association; served as treasurer of the Western Association of Industrial Physicians and Surgeons; past president of the Contra Costa County Medical Society; died in Oakland April 5, aged 56, of acute coronary occlusion and hypertension.

Mensch, Saul Allan, New Hyde Park, N. Y.; Medizinische Fakultät der Universität, Wien, Austria, 1935; member of the American Medical Association; served during World War II; died recently, aged 42.

Mervis, Frank Henry ⊕ Chicago; Chicago College of Medicine and Surgery, 1914; member of the Indiana State Medical Association, died in Swedish Covenant Hospital May 8, aged 59, of cerebral hemorrhage.

Molloy, Lee Pope, Paducah, Ky.; University of Louisville (Ky.) Medical Department, 1907; died in the Riverside Hospital April 3, aged 76, of heart disease.

Moore, James Nelson, Eureka, Calif.; University of California Medical School, San Francisco, 1944; served during World War II; died in the Veterans Administration Hospital, Palo Alto, April 17, aged 35, of multiple sclerosis.

Murrie, Robert Gregg, Albany, Texas; University of Texas School of Medicine, Galveston, 1905; county health officer; affiliated with Shackelford County Memorial Hospital; died in Hendricks Memorial Hospital, Abilene, March 14, aged 67, of arteriosclerotic cardiovascular disease.

Musselwhite, Brooks Jesse, Westmont, Ill.; Bennett Medical College, Chicago, 1914; formerly practiced in Chicago, where he was for many years a police surgeon; died April 20, aged 63, of coronary occlusion.

Nelson, Michael, Chicago; Harvey Medical College, Chicago, 1903; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; member of the American Medical Association; affiliated with American Hospital, where he died April 16, aged 77, of hypertensive heart disease and arteriosclerosis.

Nickum, John Stanley ⊕ Bridgeport, Conn.; Tufts College Medical School, Boston, 1918; fellow of the American College of Physicians; on the staff of the Bridgeport Hospital, where he died April 8, aged 60, of acute coronary occlusion.

Noble, Lemuel Franklin, Boston; College of Physicians and Surgeons, Boston, 1913; died March 2, aged 78, of heart disease.

Norvell, Elijah Edward, Oklahoma City, Okla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; University of Nashville (Tenn.) Medical Department, 1904; died in Wesley Hospital April 21, aged 79, of heart disease.

Oberschmidt, Charles McCormick, Memphis, Tenn.; University of Tennessee College of Medicine, Memphis, 1924; a director of the Shelby County Tuberculosis Association; member of the American Trudeau Society and the American Medical Association; served on the faculty of his alma mater; for many years on the staff of the Oakville (Tenn.) Memorial Sanatorium; affiliated with Baptist Memorial, Methodist, St. Joseph, and John Gaston hospitals; died April 4, aged 50, of myocardial infarction and hypertension.

Olney, Thomas Albert, Chesterton, Ind.; Rush Medical College, Chicago, 1892; member of the American Medical Association; served on the staff of St. Joseph's Hospital in South Bend, where he died April 4, aged 81, of carcinoma of the pancreas.

Otto, Jacob Schweighauser ⊕ Buffalo; University of Buffalo School of Medicine, 1898; an Associate Fellow of the American Medical Association; formerly on the faculty of his alma mater; served on the staffs of the Children's, Edward J. Meyer Memorial, and Buffalo General hospitals; died May 3, aged 79, of edema of the lungs.

Pugh, Bernard McCarthy ⊕ Clinton, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; formerly mayor; died Feb. 19, aged 63.

Repp, John Jacob, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1905; member of the American Medical Association; died April 29, aged 82, of prostatic carcinoma.

Spooner, John Ira, Donalsonville, Ga.; Medical Department of Tulane University of Louisiana, New Orleans, 1911; member of the American Medical Association; died March 11, aged 68, of diabetes mellitus.

Strickler, Clarence A., Mattoon, Ill.; University of Louisville (Ky.) Medical Department, 1879; died March 20, aged 95, of coronary disease and hypertension.

Stuckert, Harry ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1907; assistant professor of obstetrics and gynecology at his alma mater; fellow of the American College of Surgeons; on the staffs of Jefferson Medical College Hospital and St. Joseph's Hospital; died March 3, aged 70, of pulmonary embolism.

Sullivan, Michael Joseph, Maywood, Ill.; Rush Medical College, Chicago, 1915; member of the American Medical Association; formerly practiced in Chicago, where he was a member of the board of health; died March 22, aged 77, of pneumonia.

GOVERNMENT SERVICES

ARMY

Seventeen Courses for Military and Civilian Physicians.—The Army Medical Service will conduct 17 short postgraduate courses in surgery, psychiatry, and other subjects of major medical importance during the last six months of 1952. The instruction is open to both military and civilian physicians and is the broadest program of postgraduate professional training of this type ever sponsored by the Army Medical Service. Postgraduate training is designed to ensure that all Army personnel continue to receive the finest professional medical care obtainable.

The courses will be given at six large Army teaching hospitals and the Armed Forces Institute of Pathology in Washington, D. C. They are an integral part of the Army's career plan for medical officers under which physicians are encouraged to continue their professional education. The instruction also serves to keep medical officers in outlying installations abreast of new developments and to foster the growth of teachers in the Army Medical service. Eligible applicants must have attained one of two qualification levels. Those considered to be at level 1 are board-certified or board-qualified physicians, chiefs or assistant chiefs of services in hospitals, and other officers well advanced in the study of their specialty. Applicants with level 2 qualifications include officers partially qualified in a specialty, those with a special interest in the subject, or ward officers or unit surgeons responsible for medical treatment in the specialty concerned. Medical officers receiving residency training may attend courses only at hospitals where they are serving.

Applications from Army medical officers on active duty and full-time Civil Service physicians at Army installations should be forwarded to the Office of the Surgeon General, Department of the Army, Washington 25, D. C. Attention: Career Management Branch, Personnel Division. Applications should be received six weeks prior to the opening date of the course. Reserve medical officers should apply to their Army area commander, while National Guard physicians should write to the National Guard Bureau in Washington. Civilian physicians in the Federal service or in private practice should apply to the appropriate hospital or installation commander. The courses will be given at Army and Navy Hospital, Hot Springs, Ark.; Letterman Army Hospital, San Francisco; Walter Reed Army Hospital, Washington, D. C.; Fitzsimons Army Hospital, Denver; Brooke Army Hospital, Fort Sam Houston, Texas; and Armed Forces Institute of Pathology, Washington, D. C.

Lieut. Col. Isidor Markowitz Awarded Legion of Merit.—Surgeon General George E. Armstrong awarded the Legion of Merit to Lieut. Col. Isidor Markowitz June 18 for "exceptionally meritorious service" as Surgeon of the Third Medical Battalion in Korea. The citation accompanying his decoration declared that through "meticulous planning and close supervision" Colonel Markowitz had "instituted extensive sanitary and preventive medicine programs which raised health and living standards, directed an efficient system of out-patient accounting in the field and established effective liaison between the staffs of the division and medical battalion." The citation noted that a study by Colonel Markowitz of the effect of fatigue on gun crews' efficiency had "assisted in improving artillery fire of operating personnel."

Colonel Markowitz's proposals to bring personnel qualified to perform eye refractions up to the division clearing station level to avoid needless evacuation of soldiers who had broken their spectacles was "of inestimable value in the formulation of comprehensive corrective measures." He also succeeded in having serology testing sets installed at the Third Division clearing station, thus eliminating the need for flying specimens back to Pusan or Taegu by courier plane for laboratory examination. The citation concluded: "With complete devotion to duty, Colonel Markowitz dedicated his time and talents to maintaining optimum effectiveness in medical service and his outstanding professional ability and the distinguished manner in which he fulfilled the responsibilities of his office reflect great credit on himself and the military service." Colonel Markowitz was previously awarded the Bronze Star Medal with "V" device and Oak Leaf Cluster and the Purple Heart for his service in Korea.

Museum Exhibit of Ninety Year History.—The Armed Forces Institute of Pathology, formerly the Army Medical Museum, 9th and Independence Avenue, S.W., Washington, D. C., is presenting an exhibit tracing 90 years of its history. The exhibit, which will be displayed for the six months following May 21, includes some relics of Major Walter Reed when he was engaged on the famous yellow fever experiments, and of Major F. F. Russell, now Brigadier General, retired, who gave the first U. S. Army antityphoid vaccine to volunteers from the museum's staff. A replica of the old museum depicts Civil War days when Surgeon John H. Brinton, first curator of the museum, toured battlefields to collect material for the museum. Other exhibits show developments in medical illustration through the years and modern museum techniques.

Personal.—Col. William S. Moore (MC) has reported for duty in the Office of the Surgeon General, where he will serve as chief of the hospitalization and operations branch of the medical plans and operations division. Colonel Moore's most recent assignment was as commanding officer of the 8167th Army Unit at Tokyo Army Hospital.

PUBLIC HEALTH SERVICE

Recommendations of Conference on Rabies.—The South Middle Atlantic Regional Rabies Conference was held June 2-3 in Washington, D. C. Called by the Public Health Service staff of the Region 3 Office of the Federal Security Agency, the conference was cosponsored by the Fish and Wildlife Service of the Interior Department and the Bureau of Animal Industry of the Department of Agriculture. An Eastern Regional Rabies Council was established to develop plans and procedures to put the recommendations of the conference into effect. This council will be a continuing body representing the following states, which took part in the conference: Pennsylvania, Ohio, Maryland, Delaware, Virginia, West Virginia, Tennessee, Kentucky, North Carolina, South Carolina, Georgia, and the District of Columbia. Dr. Martin P. Hines, chief, veterinary public health section, North Carolina State Board of Health, was named chairman of the council and Dr. Albert S. McCown, director, bureau of communicable disease control, Virginia State Health Department, was named secretary.

The recommendations of the conference were as follows:

1. That each of the affected States inaugurate coordinate programs for the control of rabies; that each State's program can most effectively be carried out through the creation of a committee composed of representatives from these agencies at the State level responsible for public health, livestock disease control, and wildlife conservation. This Committee will maintain close cooperation with the unofficial organizations interested in rabies control; that each State Committee designate one of its members, preferably the State Public Health Veterinarian, where one exists, as the permanent Secretary, the duties of the Secretary to include the exchange of current rabies control information between States.
2. That each State arrange for adequate diagnostic facilities, including animal inoculation of any Negri negative and questionable specimens.
3. That each State arrange for the reporting of rabies cases in ALL animals, reports to be collected by an approved State agency, and that the State Health Officer include these data in the weekly telegraphic reports to the U. S. Public Health Service.
4. The Conference recognized the importance of rabies in wildlife and recommends that investigations be undertaken to study the epizootiology of the disease in wild fauna in order to improve methods of control.
5. That technical assistance and guidance be made available from the U. S. Public Health Service, the U. S. Fish and Wildlife Service and the U. S. Bureau of Animal Industry.

Personal.—Dr. Paul Lindquist, formerly medical officer in charge of the Heart Demonstration Program in Charleston, S. C., has been named to head the health team of the Technical Operation Administration (Point 4) program in Libya.

FOREIGN LETTERS

AUSTRALIA

Tetanus Following Use of Starch Dusting Powder.—Ten days after a patient in a Queensland hospital underwent an operation for the relief of intestinal obstruction clinical tetanus developed, and he died two days later with severe opisthotonos. The health department, in the course of the investigation, studied a residual supply of a starch dusting powder used for surgical gloves. The powder was packaged by a British pharmaceutical organization. It made no claim to be sterilized.

Laboratory studies were made on guinea pigs, half of which were protected by tetanus antitoxin. All were injected with a suspension of the powder. All the unprotected animals died in a spasm. A disturbing feature of this inquiry was that this powder had before use been subjected to sterilization by an autoclave under standard conditions. It was found that steam under pressure did not penetrate the starch powder. Dry heat was found to be necessary for efficient sterilization. Tests have been made on all other brands of starch powder on the market, but no evidence of infection has been found.

Religious Sect Bans Blood Transfusion.—A group in Australia, known as Jehovah's Witnesses, interpret a passage in Genesis 9: 4 as a holy injunction against the practice of transfusion of blood. This was discovered recently when arrangements were made in Brisbane, Queensland, for a blood transfusion during an operation for arthroplasty of the hip joint. The patient was an elderly woman whose husband was a member of Jehovah's Witnesses. The operation was therefore modified, and dextran was employed to support the patient's cardiac output during the operation. Recovery was uneventful. The passage in Genesis reads, "Flesh with the life thereof, which is the blood thereof shall ye not eat."

Potassium Bromate Deaths.—In an Australian country town, three children are reported to have been poisoned with potassium bromate, obtained from a home kit for hair waving. The powder is described as the "neutralizer." The children were aged 13, 11, and 4 years. The neutralizer was dissolved in ginger beer, and each child was given the contents of one packet in this way. The mother took a quarter of a packet herself. Soon after ingestion the boy aged four began vomiting and crying.

Desperate measures, including exchange transfusion, using up to nine liters of blood, were tried in an unsuccessful attempt to save the lives of the children. Progressive weakness of the victims forced abandonment of the transfusions. All three died. The hospital physicians knew of no antidote for potassium bromate. The mother recovered from the effects of the poison she took. She was then charged with the wilful murder of her children. At the trial the woman denied that she knew the powder was poisonous. A jury acquitted her on charges of wilful murder, murder, or manslaughter of the boy aged 11 years. She is still to stand trial for the wilful murder of her two other children.

Hospital Finance in Australia.—The financing of public hospitals from state and commonwealth revenue has proved inadequate to meet the rising costs resulting from inflationary trends to the order of 20% per year. New South Wales and Queensland conduct state lotteries to finance their hospitals, and Victoria is contemplating such a method. It is the view of the Commonwealth Minister of Health, Sir Earle Page (himself a medical man), that lotteries are a wasteful method of finance, as 70 to 80% of the income is spent on administration and prizes. There are four other methods of hospital finance. 1. Taxation. As taxation has now reached its limit, no further help can be expected from this source. 2. Patients' fees. Most of the patients in a public hospital cannot afford more than a "token" payment. 3. Charitable donations. The recent increase in taxation has eliminated the income from these sources. 4. Prepaid insurance. It could be compulsory or voluntary, with or without government aid.

This last is now the official policy of the government. Approved organizations collect a contribution of three pence (3.5 cents) per week for single persons. When a contributor enters a hospital he will receive £2.2 ($5.88) per week from the organization. He will also receive an additional benefit from the government of £1.8 ($3.92). Whether he is a contributor or not, he will receive the government subsidy of £2.16 ($7.84) per week. Thus a contributor receives an "incentive" of £3.10 ($9.80) to join an organization and subscribe to its membership. The total benefit to a contributor is £6.6 ($17.64), but this will not meet the whole of his basic hospital costs, which at present vary from £8.8 to £16.16 ($23.52 to $47.04) per week.

Holger Nielsen Method Adopted.—At its annual conference in Sydney last month, the Surf Life Saving Association of Australia officially adopted the "push-pull" Holger Nielsen method of artificial respiration. The article in THE JOURNAL (147: 1444 [Dec. 8] 1951) entitled "Critical Survey of Manual Artificial Respiration" and the report by the Council on Physical Medicine and Rehabilitation in the same journal, page 1454, on this method assisted the association in making its decision. The Royal Humane Society, an organization of British origin, is deferring action. The geographical situation of the main centers of population along the seaboard of Australia has made surf bathing a national pastime. Voluntary associations of young men, and sometimes women, provide a valuable service at the chief surfing beaches during holiday seasons. At the ocean beach, restricted areas of about 100 yd. in width are marked with flags, and bathers are advised to enter the surf in that location only. A continuous watch is kept for bathers who need assistance. When this occurs (and it does nearly every day in the season) a highly organized and trained team of surf lifesavers goes into action. Many lifesaving units are equipped with Eve's rocking apparatus, but the Schafer method has been the standard one in use ever since the system of lifesaving on the beaches was developed early in this century.

Childbirth by Proxy.—A businessman in Sydney advertised for a foster mother to bear a child for his wife. The successful applicant would be fertilized by artificial insemination using the husband's semen. Investigations had shown the man to be normally fertile, but his wife was sterile. The amount to be paid to the "foster" mother was not disclosed, but it was stated to be substantial. Thirty-eight applications were received, and a careful screening was undertaken. It is understood that one has been chosen. The mother will be required to give the baby to the couple after birth, when it will be legally adopted. The proceedings were arranged by a medical agency, and the identities of those concerned will not be known to each other.

Poll Views on Professional Secrecy.—A cross section of Australia's population was asked by Gallup Poll interviewers, "If it is necessary to protect innocent people, should doctors give the police confidential information about their patients?" The majority said "yes." The question was regarded in medical circles as an isolated and extreme example. The layman was given the impression that no other evidence was being sought by the police to insure justice. Respect for physician's confidence is felt to be so valuable in the physician-patient relationship that the benefit far outweighs a hypothetical disadvantage such as was posed.

ACTH to be Made Here.—A composite Australian-Danish company, formed in Australia, expects to be producing corticotropin (ACTH) this year. Representatives of Frederiksberg Chemical Laboratories Ltd. of Copenhagen and Drug Houses of Aus-

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The items in these letters are contributed by regular correspondents in the various foreign countries.

tralia Ltd. have formed a new company, which is called the Acton Laboratories (Aust.) Pty. Ltd. In the meantime, the public demand for cortisone and corticotropin has fallen considerably. This had reached a high level following early enthusiastic announcements in the lay press and popular magazines.

Medicolegal Society Founded.—Since there are many problems to which the joint intelligence of the legal and medical professions could make a contribution, a medicolegal society has been founded in Queensland. Problems that were outlined at the inaugural meeting were psychiatric anomalies, juvenile delinquency, and matrimonial problems.

BELGIUM

Anesthesia and Surgery of the Heart.—In the *Acta chirurgica belgica,* van Nouhuys describes his technique for administration of anesthesia in the Blalock operation in 26 children aged from 7 months to 15 years. The outstanding features of this technique are: ether-oxygen induction, local pharyngolaryngeal anesthesia with 10% cocaine and reinduction, blind nasotracheal intubation whenever possible, and maintenance of narcosis with cyclopropane-oxygen with curare (0.5 mg. per kilogram of body weight). The author chooses the nasotracheal route, with which he has had a great deal of experience, because he thinks that a tube that fits closely in the nostril is perfectly adapted to the diameter of the glottic orifice. Packing is difficult, and tubes with sleeves are apt to cause glottic edema.

The author also reports operations in three patients from 5 to 10 months old for tracheoesophageal stenosis due to the presence of a double aortic arch. The patients were very delicate, cyanotic, and dyspneic, with pulmonary infections. Induction, which was very difficult, was accompanied by an intensification of stridor and cyanosis. The passage of a tracheal tube, even if it does not pass the stenosis, permits the aspiration of secretions and improves the situation, which changes entirely as soon as the stricture is removed surgically. The three patients had uneventful convalescences.

Thyroid Cancer.—Dailey, Lindsay, and Soley report in the *Journal of the International Union Against Cancer* that in 134 cases of malignant tumors of the thyroid gland, the most frequent types were papillary carcinoma (48), adenocarcinoma (37), and simple carcinoma (25). There were 21 patients known to have died and 10 to have lived with metastases, some of which were in the lungs and in the bones, and this after a lapse of time amounting sometimes to 10 years.

Desaive and Closon, in the *Revue médicale de Liège,* show the rarity of thyroid cancer (1% of all cancers, 2.7% of goiters, and 0.5% of hyperthyroids). The average age is between 55 and 60 years. Thyroid cancer is more favorable in children than in adults; it is more frequent in women and more serious in men. Thyroid cancer is rarely associated with other cancer.

Belgian League Against Rheumatism.—The Ligue Belge contre le Rhumatisme lately celebrated the 25th anniversary of its founding, under the presidency of Dr. Ferond and in the presence of numerous foreign rheumatologists. Numerous valuable studies were presented on this occasion, among which was "Relations between hypophyseal disturbances and articular affections" by Dr. Layami. The author reviewed the action of the hormones: somatropic, corticotropic, thyrotropic, and gonadotropic.

The somatropic hormone produces hypertrophy of the cartilaginous and periosteal tissues, usually without pain and with articular laxity. The disease has a course like that of degenerative arthritis, the vertebrae close to the ninth dorsal are hypertrophied in width, giving an impression of flattening; there are moniliform osteophytes, unrelated to a discal lesion; unlike the condition in rheumatism, blood phosphorus is elevated and the bones sometimes present a tufted appearance.

Corticotropic hormone produces osteoporosis, predominantly spinal and pelvic, ballooning of the disks, and no osteophytosis. There is a retardation in chondrogenesis and osteogenesis; the lesions, in the adult, affect the connective web of the osseous tissue.

Thyrotropic hormone produces hyperthyroid osteosis in various forms, for instance: hyperalgia of the skeleton; fractures as in a case of neoplasm; sometimes the appearance of polyarthritis, predominantly spinal and pelvic; calciuria, increased in the beginning; silent humoral syndrome; sign of discreet hyperthyreosis; and osteoporosis. These manifestations are cured when the exophthalmic goiter is cured. They are reproduced when hyperthyroidism is provoked in an animal.

With regard to the gonadotropic hormone, the gonadal deficiency does not seem to act, in young persons, on the cartilage. The menopausal syndrome is a complex syndrome in the course of which the three preceding factors exercise a variable action. The hypophysis seems to be the gland that plays the largest part in this condition.

Prof. Merle d'Aubigné presented a paper on orthopedic treatment of rheumatic localizations in the lower limbs.

Neurotomies give uncertain and impermanent results. Apart from cases in which there are exceptional indications, arthrodesis of the tibiotarsal is the operation to be recommended for the ankle. For the knee, ankylosis, which is somewhat crippling, is not advisable except in cases of articular laxity or in patients for whom walking is the most important function. For the rest, patellectomy constitutes an excellent procedure. In the hip, ankylosis is better tolerated; the disadvantages of earlier procedures are obviated by arthrodesis with nailing. This intervention results, however, in a large number of venous thromboses. Arthroplasties with a hip cup or acrylic prosthesis often give very good results, but not always. It is advisable to operate on subluxations when they begin to be painful; at that time repair of the acetabulum may be sufficient.

A third study was "Heredity and rheumatism." Stocker (Cleveland) presented statistics on 8,000 persons followed because of nodosities on the fingers, uricemia, and ankylosing spondylitis. Nodosities were found in 70% of the cases in families of persons who had already shown these characteristics. Sisters were affected oftener than the other members of the family, in the proportion of 8 to 11; Heberden's nodosities show a hereditary character largely influenced by the menopause.

Uricemia not being always synonymous with gout, the author investigated the possibility that it might have a predominantly recessive character. It is transmitted as a dominant characteristic in 85% of men and 15% of women. Gout may possibly be due to an abnormal androgen, the importance of which is greater in men than in women. This hormonal factor rises in women after the menopause, in men after adolescence. Ankylosing spondylitis also seems to be a hereditary disease, brothers being affected oftener than sisters.

Trauma and Phosphatemia.—At the laboratory of experimental medicine of the Faculté de Médecine de Bruxelles, Moyson found a substantial increase in serum phosphatase activity in patients who have undergone aseptic surgical intervention. The same phenomenon appeared in patients who had profuse hemorrhages or extensive burns, and finally in two patients with ischemic gangrene of an extremity. The author reproduced this hyperphosphatemia by causing a profuse and sudden hemorrhage in dogs. It was still more evident if a part of the blood taken from the animal was aseptically reinjected into its peritoneum.

The hyperphosphatemia is not immediate; it is, therefore, not one of the symptoms of immediate traumatic shock. Neither is it coincidental with post-traumatic hyperglycemia with which it does not seem to be connected. Finally, the increase in serum phosphatase activity is not a result of hyperthermia, since it is observed both when fever exists and also in posthemorrhagic states and ischemic gangrene, in which the temperature is normal.

Death of Dr. Derscheid.—Dr. G. Derscheid, pioneer of the antituberculosis battle in Belgium, has died. In 1897, he created a service for pulmonary tuberculosis at the Polyclinic in Brussels, the first public move to combat tuberculosis. He organized, in 1902, the Société Anonyme des Sanatoria Populaires with 250 beds; in 1926 a surgical section was established there. In 1923, he created the National Association Against Tuberculosis; and in 1929, Dr. Derscheid organized the Oeuvre Nationale de Défense contre la Tuberculose.

CHILE

Free Protoporphyrin in Red Blood Cells in Anemia.—Drs. H. Ducci and L. Toriello of the Salvador Hospital, having established that the normal value of free protoporphyrin in red blood cells is 39 γg per 100 cc. of red blood cells, decided to study the values in cases of anemia. In 20 cases of pernicious anemia the values were 21 γg. Treatment influenced these values, and simultaneously with the reticulocyte crisis there was a marked increase in the values of free protoporphyrin. In the 15 cases of hypochromic anemia the average values were 146 γg. It was seen that in cases in which the red blood cells were within 4 million the values were normal. In eight cases of hemolytic anemia the value of free protoporphyrin was higher than the maximum normal values. The authors suggest that the determination of free protoporphyrin, besides giving us a newer and better understanding of the physiopathology of anemia, gives a new appreciation of the results of the therapy used.

New Institute of Neurosurgery.—The new building for the Instituto Central de Neurocirugia y Neuropatologia is under way, and the institute has arranged plans to move into the building in the near future. The latest acquisition of the institute is an electronic microscope for neuropathological studies. The department of neurophysiology equipped with the latest instruments of research will be provided with two operating rooms for research work with animals. Special facilities have been provided for the departments of neuroradiology, brain chemistry, clinical electroencephalography, neurotology, and neuro-ophthalmology. The hospital will have 126 beds and 4 operating rooms, one of which will be dedicated exclusively to emergency cases. Besides a readaptation center, the institute will have a kinesitherapeutic, a psychosurgical, and a psychotechnical center. At present the institute is carrying out research work in epilepsy and corticograms. The institute was founded in 1939, and its director is Prof. Alfonso Asenjo. The institute has and is receiving interns from Mexico, Venezuela, Peru, Argentina, and France. The hospital is provided with spacious quarters for interns.

Rheumatoid Arthritis.—Recently Drs. M. Losada and O. France published a study on the diagnosis of rheumatoid arthritis derived from the study of 200 cases; 70% were women. The age distribution was: 20-29, 18%; 30-39, 25.5%; 40-49, 32.5%; and 50-59, 13%. The onset of the disease was acute or subacute in 54%. Focal infections in areas such as the teeth and sinuses were present in 23%. Rheumatic heart lesions were present in 5%. Regarding the symptomatology, general well-being was affected in 45%, fever was present in 55%, tachycardia was present in 14%, and a normal pulse rate in 81%. Skin lesions, those of the hands being smooth, brilliant, and atrophic, were present in the vast majority of the patients. Subcutaneous nodules were found in 6.1%. Muscular and vasomotor alterations were very frequent, and two patients had Raynaud's syndrome. Adenitis of the neck, elbow, and armpit was found in 20% of the patients, splenomegaly in 2.5%, bilateral pleurisy in 1%, ocular lesions in 2.5%, and neuritis in 1%. Sjögren's syndrome was present in four cases.

In 81 patients the authors were able to make a detailed study of joint lesions. The joints were symmetrically attacked in 53%. The frequency of the joints attacked were: big joints of the lower extremities 35%, hands 24.5%, big joints of the upper extremities 22.5%, and feet 11.3%. The evolution of the joint lesions was irregular in 54.3%, centripetal in 26%, centrifugal in 7.4%, and without any specific determination in 12.3%. The classical joint deformations of the hands were present in 62%. A complete x-ray study revealed that 82% of the patients presented the classical lesions.

Regarding laboratory tests, moderate normochromic anemia was found in 33%, leukopenia in 15.4%, and leukocytosis in 30%. A deviation to the left of the white blood cell count was found in 74.2%, eosinophilia in 30%, and lymphocytosis in 54.7%. The serum flocculation tests were positive in 81.5%. A decrease of the excretion of the total neutral 17-ketosteroid bodies in the urine was found in 74%. The authors stress the importance of the following serologic tests: antistreptococcic agglutinins, sensitized agglutinins against sheep red blood cells, and antistreptolysin titer. The authors are working in the Salvador Hospital under Prof. Hernan Alessandri.

Border Sanitary Agreement.—The third annual meeting of the control committee of the Border Sanitary Agreement between Chile, Bolivia, and Peru was held in La Paz, Bolivia, from March 10 to March 12. The Chilean delegation was headed by Prof. A. Neghme; the Peruvian delegation, by Dr. Enrique Villalobos; and the Bolivian, by Dr. N. Orihuela. The agreement stipulates the exchange of technical and other information for the control of infections and parasitological diseases (malaria, yellow fever, exanthematic typhus, smallpox, and bubonic plague). The objectives formed were: (1) intensification of the antimalarial campaign in the border regions, (2) increase of work in American trypanosomiasis, (3) use of DDT in control of pediculosis, and (4) investigation of the status of rabies in the border regions. It is possible that in future meetings a delegate of the Pan-American Sanitary Office will assist as an observer.

Antihydatidosis Campaign in Tierra del Fuego.—Fulfilling the agreement signed with Argentina in 1948 concerning the control of hydatid disease the department of parasitology of the health department in conjunction with the ministry of agriculture (Departamento de Ganadería) have, since December, 1951, till the present moment, treated in Tierra del Fuego 3,700 dogs with good results. The method used in the treatment of all dogs was administration of arecoline hydrobromide (4 mg. per kilogram of body weight). Besides this a sanitary education campaign is being carried out.

Yellow Fever Control.—The latest report submitted to the Pan-American Sanitary Office by the entomologist J. Correa regarding the campaign led by the department of parasitology of the health department for the destruction of the Aedes aegypti vector of yellow fever was highly interesting. It revealed that, except for some very small foci still in existence in certain parts of the provinces of Antofagasta and Tarapacá, the vector has been completely eliminated. The success was due to the use of DDT two or three times a year in 56 different localities.

MEXICO

Dedication of New Building and Departments.—In 1951, as a result of a suggestion by President Alemán, several businessmen gave the necessary funds to undertake the construction of new buildings and the enlargement of others already existing at the Instituto Nacional de Cardiología. According to officials of the institute the additions were indispensable in view of (1) the steady increase in cases in the outpatient department, (2) the insufficiency of the wards to take care of all the admission requests, and (3) the fact that the number of graduate students from abroad, as well as from Mexico, has been increasing yearly.

The donations amounted to 4 million pesos and were designated to provide (1) a new four floor building to house the school of nursing and to provide living quarters for interns and graduate students, (2) a new floor for private patients in the general building, leaving the other floors exclusively for patients of low income, and (3) a larger department of surgery.

Last April 18, on the eighth anniversary of the institute, President Alemán dedicated the new departments. Invited to the event and to participate in several scientific meetings were delegates from the medical institutions of Mexico and those from different countries. Among them were Dr. Bernardo Houssay from Argentina, Dr. Ramón Aixalá from Cuba, Drs. Helen B. Taussig, Paul D. White, Joseph Brumlik, and Lewis Dexter from the United States, and Dr. Clarence J. Crafoord from Sweden.

Meeting of Allergy Society.—The Sixth National Meeting of the Mexican Society of Allergy, held in Puebla from Feb. 25 to March 1, was attended by more than 400 delegates from different sections of the country. Papers of particular interest were those by Dr. Salazar, on immunologic studies in asthma and pulmonary tuberculosis; by Drs. Rosales and Bautista, on the role of intestinal parasites in the development of urticaria; and by Dr. Hernández-Jáuregui, on the experimental effects of antihistaminic substances on glycemia. All papers read at the meeting will be published in the *Revista Mexicana de Alergología*, official organ of the society. The next meeting will be held in Monterrey in the first quarter of 1953.

CORRESPONDENCE

DISCARDING OF OUT-DATED MEDICAL TERMS

To the Editor:—In Dr. Stewart Wolf's recent letter in THE JOURNAL on old terms and modern concepts in medicine (May 10, 1952, page 186) I liked one of his final statements: "Consistent progress in medicine today depends, as always, on changing methods and concepts, and clarity in thinking requires that worn out concepts be discarded together with the clichés that serve them." This is particularly true, I believe, in the teaching of clinical medicine, where the vigorous and picturesque language of last century still finds a large place in the professorial vocabulary. In a rapidly changing atomic era, the homespun qualities of an earlier Americana idiom may have lost much if not all of its original rich colloquial connotation; the medical student of today, bewildered and perhaps bemused, repeats in a parrot-like fashion a traditional phrase that has no counterpart or significance in his everyday experience.

Over the years I have enjoyed the philologic jousting with my students in regard to the meaning of certain words and concepts that have been handed down from one medical generation to another with increasing vagueness of their origin or underlying significance. High in such a list of phrases is the "hobnail liver." My grandfather in the 1860's wore hobnail shoes, and as a boy at the turn of the century I remember playing with hobnails, but I doubt that the modern youth has the slightest idea of what a hobnail looks like and why certain changes on the surface of the liver are called hobnail. In the same category is the "nutmeg liver." Older physicians may recall with some nostalgic memories this flavorsome spice; it was used by their mothers at every opportunity. The medical student of today has an amazing amount of misinformation concerning nutmegs. It does not come from Connecticut, it is not a nut, and, if they know the size and shape of the spice kernel, nutmeg liver does not refer to small rounded lumps on the surface of that organ. When nutmeg is grated the cross section has a block pattern very similar to oak wood; in the cut sections of certain livers the older pathologist saw the resemblance.

"Water hammer pulse" always elicits a number of strange interpretations. To the Victorian physician it referred to Gilchrist's hydraulic drilling machine and the pulsations produced in the fabric hose with each stroke of the steam driven pump. Corrigan did not use the pulse in aortic insufficiency to drive a hammer, and Corrigan's *bruits* was not a musical instrument activated by the pulse in this type of valvular heart disease.

A "wiffle-tree murmur" was well known to the horse and buggy doctor. A wiffle-tree is not an evergreen, and the murmur was not the soft blowing poetic sound of gentle breezes blowing through the foliage of exotic shrubbery. It was the harsh squeaking sounds of the wooden harness bar as it turned on the rusting swivel bolt with the movement of the horse. Occasionally a medical student with a rural background recognizes the wiffle-tree murmur for what it is, but he usually tries to bring gallop rhythm into the definition. "Machinery murmurs," "cogwheel breathing," and "tic-toc heart sounds" had a special significance in the 1880's when contemporary family life was being revolutionized by a host of new mechanical gadgets; these traditional terms are meaningless and confusing to the modern student.

There are many other phrases in the list. A "walking beam motion" will cause many an oldster to smile at the memory of river boats and the side-wheelers of the old Fall River Line. A walking beam is not a cane, nor a crutch, nor any other type of orthopedic walking apparatus, notwithstanding most students' comprehension of the concept. Finally, the beloved phrase of the older pathologist: "the lesion is about the size of a millet seed." Although the millet seed was an established unit of size as far back as biblical times, present day youth has probably never seen millet and certainly not its seed.

I agree with my distinguished contemporaries that clinical medicine loses much of its picturesque and robust Victorian phraseology with the elimination of these traditional concepts, but new times demand new words and new thinking. With a vocabulary bristling with words initiated by cultural contact with radio, television, radar, and nuclear fission, the modern medical student enters the classroom unprepared to utilize the thinking of a now bygone period in the description of today's medical science. Cabot once said that the average medical student was in a state of perpetual mental bewilderment; it would seem that the humane point of view would be to lessen rather than increase confusion in medical education.

ALBERT SALISBURY HYMAN, M.D.
450 E. 63rd St.
New York 21

OXYGEN THERAPY IN MYOCARDIAL INFARCTION

To the Editor:—In the recent report by Borden, Ebert, and Wilson (*J. A. M. A.* **148**:1370 [April 19] 1952), we were interested to find that the chemical determinations of oxygen in arterial blood taken from patients suffering from acute myocardial infarction with various complications confirm the data previously obtained by the Millikan oximeter and reported by Godfrey, Pond, and Wood (*Am. J. M. Sc.* **216**:605, 1948) and later by Penneys (*Bull. Johns Hopkins Hosp.* **90**:192, 1952). Borden and co-workers note that, unless there is a considerable lowering of arterial oxygen saturation, only a small amount of oxygen can be added to the amount already carried by the blood, by increasing the saturation of the hemoglobin and by increasing the amount of oxygen in solution. They state that with inhalation of 40% and 100% oxygen increases of arterial oxygen content of only 0.9 and 2.2 vol. % occur. We would like to point out, however, that such changes in saturation are accompanied by rises in plasma oxygen tension of approximately 100% and 500%. That such increases in blood oxygen tension are reflected in the tissues has been shown polarographically in skin (Montgomery and Horwitz, *J. Clin. Investigation* **29**:1120, 1950) and in the myocardium, with particular reference to the borders of ischemic areas (Saÿen and others, *J. Clin. Investigation* **30**:932, 1951). It is apparent that these rises are inadequately reflected by measurements of arterial oxygen saturation. It is our contention that, therapeutically, such increases of oxygen tension in tissue may be of great importance.

ORVILLE HORWITZ, M.D.
JOHN J. SAŸEN, M.D.
Robinette Foundation
Hospital of the
University of Pennsylvania
Philadelphia.

ELECTROCARDIOGRAPHIC CHANGES IN PULMONARY EMBOLISM

To the Editor:—In connection with the editorial in the Jan. 26, 1952, issue of THE JOURNAL, page 289, on the differential diagnosis between pulmonary embolism and myocardial infarction, I should like to refer you to a paper on the electrocardiographic changes in pulmonary embolism in the April, 1952, issue of the *Florida Medical Journal* (38:701-712)

The electrocardiographic differentiation between the two, particularly that between infarction of the posterior wall and pulmonary embolism, can often be greatly facilitated by attention to the ST and T wave changes in the precordial V leads over the right side of the heart. In posterior wall infarction they are reciprocally elevated and increased in amplitude, never inverted; in pulmonary embolism they may either remain unchanged or show inversion, i. e., the right ventricular "strain pattern" of acute cor pulmonale.

DAVID A. NEWMAN, M.D.
Citizens Building
West Palm Beach, Fla.

COUNCIL ON MEDICAL SERVICE

VOLUNTARY HEALTH INSURANCE GAINS IN 1951

Continued and encouraging enrollment gains under all forms of voluntary health insurance have been reported for 1951, according to a recent survey released by the Health Insurance Council.[1] By the end of 1951 it is reported that 85,991,000 persons in the continental United States had some form of hospital expense insurance. At that time, some 65,535,000 persons were carrying surgical expense benefit insurance and 27,723,000 persons were protected against the expenses of nonsurgical care. Numerically these enrollment gains for 1951 were 9,030,000 for hospitalization coverage, 11,058,000 under surgical benefits, and 6,134,000 for medical care expense benefits. Percentagewise, the gains were 12, 20, and 28 respectively.

These gains have been recorded in a year that was accompanied by artificial economic controls in the form of wage and price stabilization. The Wage Stabilization Board sought to control certain elements of voluntary health insurance by restrictions on the amount rather than on the cost of employee benefits.

The current survey represents the fifth annual revision of "A Survey of Accident and Health Coverage in the United States." In May of 1947 the Health Insurance Council created a survey committee and delegated as one of its functions an annual study to determine the total extent of the various forms of voluntary health insurance in the country. Prior to that, several independent and individual estimates had been prepared, but they were not the inclusive studies that have gone into the preparation of these annual surveys.

Table 1.—*Persons in Continental United States Carrying Some Form of Hospital, Surgical, or Medical Expense Benefit Insurance on December 31, 1951* *

Type of Protection	Number of Persons Protected 1951	Number of Persons Protected 1950	Increase 1951 Over 1950 No.	Increase 1951 Over 1950 %
Hospital expense	85,991,000	76,961,000	9,030,000	12
Surgical expense	65,535,000	54,477,000	11,058,000	20
Medical expense	27,723,000	21,589,000	6,134,000	28

* Source: Survey Committee of the Health Insurance Council: Accident and Health Coverage in the United States, New York, Health Insurance Council, 1952.

Tables 1 and 2 indicate the enrollment growth during 1951 as well as the 1951 enrollment by type of underwriting agency.

Figures quoted in the current survey include persons protected by all types of voluntary agencies. This brings together under one study the number of persons protected by plans approved by medical societies (including Blue Shield), private insurance companies, Blue Cross plans, and independent plans. For the purposes of the survey, independent plans include industrial, community, consumer-sponsored, private group clinics, and university health programs. Excluded from the figures reported in the survey are those persons protected by workmen's compensation, those who have total and permanent disability benefits under life insurance programs, and those with commercial accident policies providing indemnity for accidental injuries, group accidental death and dismemberment insurance, commercial travel accident policies, as well as the vast number of persons protected under automobile personal injury policies and those who are protected by automobile medical payments provisions, residence liability, and other types of liability policies.

Also excluded from the figures contained in the current survey are many persons who are covered solely under government insurance as well as a number of persons receiving hospital and other medical benefits because of present or past service in the armed forces and those who receive health care at public expense in public institutions. The survey also indicates that some 39,702,000 workers out of the nation's 61,000,000 employed civilians were protected against loss of income due to disability.

Although the present enrollment figures are impressive, they are even more impressive when contrasted with the figures of a decade ago. In this regard there are now approximately 70 million more persons carrying hospitalization expense protection than was the case at the close of 1941. The number of persons covered by surgical expense benefits is approximately 62 million more than in 1941, while the survey estimates an increase of 24 million over the past 10 years in the number of persons carrying medical expense protection.

The members of the Survey Committee are to be congratulated on the thoroughness with which they have undertaken their task. It is generally recognized that there are persons who are protected under more than one type of program. The committee has taken precautions to avoid counting the same persons more than once in tabulating the results of the survey. The methods by which duplication of coverage has been minimized are set forth more completely in part 3 of the 1952 revision. In spite of the care that has been taken to collect all possible data and also to avoid duplication, the Health Insurance Council believes that the total figures represented in the following tables may be understated. In the words of the Health Insurance Council, ". . . Collection of data has been difficult because of the number and variety of organizations, many of them local in character, that provide protection against the expenses of sickness and accident. It is probable that the survey understates the full extent of accident and health protection in the United States. Some organizations providing such protection have probably been omitted, despite intensive efforts on the part of the Council to seek out every source of information and data on this subject. Many of the figures are necessarily estimated, but every care has been taken to produce estimates which are conservative in the light of the most reliable data obtainable."

Table 2.—*Persons in Continental United States Carrying Some Type of Hospital, Surgical, or Medical Expense Benefit Insurance on December 31, 1951, by Type of Agency* *

Type of Agency	Type of Benefit: Hospital	Surgical	Medical
Insurance companies			
Group	26,663,000	26,376,000	7,946,000
Individual (nongroup)	21,574,000	16,395,000	4,230,000
Total insurance companies	48,237,000	42,771,000	12,176,000
Blue Cross plans and plans approved by Medical Societies (including Blue Shield)	40,933,000	24,095,000	14,347,000
Independent plans	3,531,000	2,790,000	2,791,000
Grand total	92,701,000	69,656,000	29,314,000
Deduction for estimated duplication	6,710,000	4,121,000	1,591,000
Net total	85,991,000	65,535,000	27,723,000

* Source: Survey Committee of the Health Insurance Council: Accident and Health Coverage in the United States, New York, Health Insurance Council, 1952.

As in the past, the Council on Medical Service of the A. M. A. contemplates distribution of copies of the survey along with "Voluntary Prepayment Medical Care Plans" and the supplemental pamphlet of charts and graphs to members of the House of Delegates, officers of the Association, offices of constituent associations, as well as offices of component societies having executive secretaries. In addition, the Council plans to send the above mailing to the prepayment plans, medical schools, and all hospitals affiliated with medical schools. The Council on Medical Service will be able to supply a limited number of additional copies of the survey on request. Quantity orders should be directed to the Health Insurance Council, Room 800, 488 Madison Ave., New York 22.

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[1] The Health Insurance Council functions on behalf of the insurance business as a central source for practical and technical guidance on the development and use of accident and health coverages: (1) to associations of the medical profession and (2) to hospital administrators located in specific areas. The Health Insurance Council is made up of the following organizations: American Life Convention, American Mutual Alliance, Association of Casualty and Surety Companies, Association of Life Insurance Medical Directors, Bureau of Accident and Health Underwriters, Health and Accident Underwriters Conference, International Claim Association, Life Insurance Association of America, and the Life Insurers Conference. The Council on Medical Service of the A. M. A. and its Committee on Prepayment Hospital and Medical Service maintain frequent contact with the Medical Liaison Committee of the Health Insurance Council, the Blue Shield Commission, and others for the purpose of studying and promoting sound development of all forms of voluntary health insurance coverage.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Malpractice: Death Following Ether Anesthetic.—The plaintiff sued for damages for the death of his daughter alleged to have been caused by the negligence of the defendant physician. From a verdict and judgment in favor of the plaintiff, the defendant physician appealed to the supreme court of North Carolina.

The plaintiff's evidence was to the effect that pursuant to prior arrangements the defendant, Joyner, performed a tonsillectomy on the plaintiff's daughter on Dec. 20, 1948. The daughter was carried to the operating room about 9:30 a. m. Although the operation was completed about 10:30, she was not taken to her room until 11:30. At that time she was in a comatose state. She remained in that state until about 5:45 a. m. the next morning, when she died. After reaching her room, she did not move until spasms set in later. She was hot and feverish, her temperature going up to 107 F. Although the child's mother made repeated efforts through the nurses to get in touch with Dr. Joyner, he did not visit the patient until about 5:15 p. m. He then did nothing for her; he just stood and looked at her about five minutes. Glucose was administered at about 5:30 under Dr. Joyner's orders. He returned about 7:00 p. m. The patient was then having spasms. He did nothing then but returned about 9:00 or 9:30 p. m. The nurses began to administer oxygen about 7:40 p. m. Dr. Joyner returned about 12:00 midnight. He left the hospital for home to get some rest about 2:30 a. m. The patient's mother asked him why he did not come and attend to Judith. He said he was so busy that he just did not have the time to attend to her. On the day before the operation the mother of the deceased had told the defendant that the girl had a cold and her nose was running. The defendant said that he would have to operate the next day because he was leaving town, and it did not matter that she had a cold. The mother told him that she wanted her physician to administer the anesthetic. Dr. Joyner said no; they had a man to do the work, and he would use him. The plaintiff's medical evidence indicated that it was not good medical practice to leave a patient unseen for a period of five or six hours after an operation. The physician should see that the patient is in good condition. It is bad medical practice to administer ether and operate while the patient has a cold. It is hazardous because it is likely to cause the infection to spread into the lungs, causing either pneumonia or a collapse of the lungs. He is apt to die a typical anesthesia death. After death the lungs of the plaintiff's intestate revealed numerous areas where the air sacs were filled with pus cells. Pus also appeared in the bronchial tubes. There was evidence of limited pneumonia and also edema. A person who is allergic to ether dies from its use almost immediately, sometimes even before an incision can be made. Postoperative hyperthermia follows convulsions caused mostly by ether. When a patient remains in a comatose state for more than one and one-half or two hours after ether is administered, there is cause for alarm. The physician should immediately begin to administer oxygen, examine the patient for shock, and take other precautions, keeping in constant touch with the patient. The plaintiff's daughter died from cerebral edema due to anoxia, that is, lack of oxygen. This was in all probability caused by anethesia. On the basis of the above evidence the jury found in favor of the plaintiff.

In former decisions, said the supreme court, we have fully discussed the requisite standard of learning and skill and the duty of a physician or surgeon who undertakes to render professional services to a patient. Briefly stated, it comes to this: (1) He must possess the degree of professional learning, skill, and ability that others similarly situated ordinarily possess; (2) he must exert his best judgment in the treatment and care of his patient; and (3) he must exercise reasonable care and diligence in the application of his knowledge and skill to the patient's case. There is no evidence in the record, the court continued, to show that the defendant did not possess the requisite knowledge and skill. The plaintiff does not seriously contend to the contrary. The plaintiff's case is made to rest on the allegation that the defendant, in treating the plaintiff's daughter, failed to exercise reasonable care and skill in the application of such knowledge and skill and the evidence in support thereof. To make out his case he must not only prove that the defendant was negligent in this respect but also that such negligence was the proximate cause or one of the proximate causes of the death of his daughter.

The courts generally recognize that the science of medicine is an experimental science, and they have been extremely careful to protect physicians and surgeons against verdicts resting on nonexpert testimony in those cases in which nonexpert testimony could constitute nothing more than mere conjecture or surmise and in which only an expert could give a competent opinion or draw a reliable inference. Yet, this court has not and could not go so far as to say that in no event may a physician or surgeon be held liable for the results of his negligence unless the causal connection between the negligence and the injury or death be established by the testimony of a brother member of defendant's profession. Indeed, we doubt that a physician or surgeon could be found who would be willing to testify unequivocally, in any case, that if he had been present he could have prevented the injury or death. In any event, such a rule would erect around the medical profession a protective wall that would set it apart, freed from the legal risks and responsibilities imposed on all others. It is true, it has been said, that no verdict affirming malpractice can be rendered in any case without the support of medical opinion. Rightly interpreted and applied, said the supreme court, the doctrine is sound. Opinion evidence may be founded on expert knowledge. Usually, what is the standard of care required of a physician or surgeon is a question concerning highly specialized knowledge with respect to which a layman can have no reliable information. As to this, both the court and jury must be dependent on expert testimony. Ordinarily, there can be no other guide. For that reason, in many instances, proximate cause can be established only through the medium of expert testimony. There are other cases, however, in which nonexpert jurors of ordinary intelligence may draw their own inferences from the facts and the circumstances shown in evidence. When the standard of care, that is, what is in accord with proper medical practice, is once established, departure therefrom may, in most cases, be shown by nonexpert witnesses.

In the present case, in the type of evidence offered, the plaintiff has met the test. What the approved practice and the approved treatment are under the circumstances disclosed by the plaintiff's evidence as well as the probable cause of death have been established, at least prima facie, by expert testimony. Failure of the physician to follow the approved practice and administer the approved treatment with ordinary care and diligence is made to appear by lay testimony. The plaintiff's expert testimony tends to show that it is bad practice to administer ether to a person who is suffering from a common cold. The mother of the deceased informed the defendant physician that the child then had a cold. It was not essential that the plaintiff prove that the defendant failed to make an examination to discover what he already knew. Because of allergy and the varying conditions of the human system, the reaction of a particular person to a specific drug is not always predictable. Ether, when administered in a careful manner and in an acceptable dosage, may sometimes cause the death of a patient. In such cases, however, the patient will die almost instantly. The plaintiff's daughter lived approximately 20 hours. Thus, death from abnormal reaction in the nature of an allergy is eliminated. It follows, the court concluded, that the plaintiff's evidence standing alone is fully sufficient to support the inference of actionable negligence. The weight and credibility of the defendant's evidence are jury questions. Whether it is sufficient to rebut the evidence offered by the plaintiff is for the jury to decide. Hence, what inferences and deductions should be drawn from the testimony, when considered as a whole, was for the jury to decide under proper instructions from the court. Accordingly, the judgment of the trial court, based on the jury's verdict in favor of the plaintiff, was affirmed. *Jackson et al. v. Mountain Sanitarium & Asheville Agriculture School et al., 67 S.E. (2d) 57 (North Carolina, 1951).*

Scientific Tests: Use in Court of Results of Electroencephalogram.—The defendant, after being convicted of assault and battery and reckless driving, appealed to the superior court, appellate division, New Jersey.

The state proceeded against the defendant on the theory that he was intoxicated and produced numerous witnesses who testified that in their opinion the defendant was under the influence of intoxicating liquor at the time of the accident. The physician who examined the defendant at police headquarters immediately after the accident, however, testified that the defendant was sober, and it was the defendant's contention that he was ill, not intoxicated, and that his illness had caused him to "black out." In support thereof, the defendant called Dr. Effron, a qualified neurologist and psychiatrist, who testified that he had examined the defendant on two different occasions prior to the accident for treatment of his condition and that he had obtained a history from him and performed electroencephalography on him. An electroencephalogram, the physicians explained, discloses any abnormalities in brain wave pattern and ordinarily will reveal whether one has suffered a stroke depending on the part of the brain involved. The trial court, over objection, refused to permit Dr. Effron to testify as to the results of the electroencephalogram, particularly with respect to the existence of a disease of the brain at the time of the accident.

As a general proposition, said the court, it may be said that any legally competent evidence which, when taken alone or in connection with other evidence, affords reasonable inferences on the matter in issue, tends to prove or disprove a material issue or defeat the rights asserted by one of the parties, and sheds any light on or touches the issues in such a way as to enable the jury to draw a logical inference with respect to the principal fact in issue is relevant and admissible. Testimony was adduced that indicated that the defendant, prior to the accident, was suffering from high blood pressure. Evidence tending to show the effect, or possible effect, of that disease on the defendant at the time of the accident would, if not excluded for remoteness or conjecture, have been admissible to explain his condition or to support his allegation of having "blacked out." The question of excluding evidence because of remoteness, the court continued, rests largely on the sound discretion of the trial judge, but remoteness is a matter of degree. The term is one that has regard to factors other than mere lapse of time, and it is said that, while time may be a practically controlling feature in some situations, comparatively few generalizations based on lapse of time alone can be safely made. Even when the evidence is remote, the question must be determined by the circumstances. In a prior case with respect to the admission of expert opinions concerning the relation to the incident in question of facts found at a subsequent date, it was said, "In principle its admission as legal evidence is based upon the theory that the evolution in practical affairs of life, whereby the progressive and scientific tendencies of the age are manifest in every other department of human endeavor, cannot be ignored in legal procedure, but that the law in its efforts to enforce justice by demonstrating a fact in issue, will allow evidence of those scientific processes, which are the work of educated and skillful men in their various departments and apply them to the demonstration of a fact, leaving the weight and effect to be given to the effort and its results entirely to the consideration of the jury." Of course, we are unable to say, said the court, whether Dr. Effron's testimony would reveal a physical impairment or condition at the time of the accident that might have a bearing on the defendant's alleged "black out"; however, in view of the sharply disputed question of his sobriety, the defendant was entitled to have the benefit of Dr. Effron's testimony, so that the jury might determine whether the loss of control of his car was causally related to some physical impairment or the result of intoxication. We are satisfied that the exclusion of Dr. Effron's testimony was erroneous and affected the defendant's substantial rights. Accordingly the defendant's conviction was reversed. *State v. Shiren, 83 A. (2d) 620 (New Jersey, 1951).*

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

ADDITIONAL HOSPITALS REGISTERED

The following hospitals were registered by the Council on Medical Education and Hospitals of the American Medical Association at its meeting in Chicago, June 6, 1952:

Perry County Hospital, Marion, Ala.
Winfield Hospital, Winfield, Ala.
Crittenden Memorial Hospital, West Memphis, Ark.
Northern Inyo County Local Hospital District, Bishop, Calif.
Corning Memorial Hospital, Corning, Calif.
Santa Anita Hospital, Lake Arrowhead, Calif.
Cedar Lodge Convalescent Hospital, Los Angeles
Westover Sanitarium, Los Angeles
Loveland Memorial Hospital, Loveland, Colo.
New Britain Memorial Hospital, New Britain, Conn.
Mount Vernon Hospital, Washington, D. C.
Palm View Hospital, Bradenton, Fla.
Washington County Hospital, Chipley, Fla.
Palms Memorial Hospital, Fort Lauderdale, Fla.
Miami Heart Institute, Miami Beach, Fla.
American Legion Auxiliary Crippled Children's Home, Pensacola, Fla.
Mitchell County Hospital, Camilla, Ga.
Lee M. Happ Memorial Hospital, Hiawassee, Ga.
McDuffie County Hospital, Thomson, Ga.
Madison Memorial Hospital, Rexburg, Idaho
Memorial Hospital, Jasper, Ind.
Starke Memoral Hospital, Knox, Ind.
Kiowa County Memorial Hospital, Greensburg, Kan.
Kearny County Hospital, Lakin, Kan.
District One State Tuberculosis Hospital, Madisonville, Ky.
Robinson Infirmary and Clinic, New Orleans
Brook Lane Farm, Hagerstown, Md.
Isham Infirmary, Andover, Mass.
Sammond Pleasant Lodge, Romeo, Mich.
Triumph-Monterey Community Hospital, Triumph, Minn.
Coahoma Clinic and Hospital, Clarksdale, Miss.
S. E. Lackey Memorial Hospital, Forest, Miss.
Okolona Community Hospital, Okolona, Miss.
Butte Community Memorial Hospital, Butte, Mont.
Community Memorial Hospital, Hamilton, N. Y.
Frances Schervier Home and Hospital, New York
Clifton-Fine Hospital, Star Lake, N. Y.
Delaware Valley Hospital, Walton, N. Y.
Swain County Hospital, Bryson City, N. C.
St. Joseph's Community Hospital, Grafton, N. D.
Columbus Receiving Hospital, Columbus, Ohio
Sanor Eye, Ear, Nose and Throat Hospital, Columbus, Ohio
Madison Hospital, Mansfield, Ohio
Oak Hill Hospital, Oak Hill, Ohio
Dunlap Memorial Hospital, Orrville, Ohio
Loris Community Hospital, Loris, S. C.
Finger Clinic Hospital, Marion, S. C.
McLaughlin Community Hospital, McLaughlin, S. D.
Wagner Community Memorial Hospital, Wagner, S. D.
Memorial Hospital, Chattanooga, Tenn.
Munal Clinic-Hospital, Kingsport, Tenn.
Lawrence County General Hospital, Lawrenceburg, Tenn.
Valentine-Shults Hospital, Newport, Tenn.
Simonton Clinic and Hospital, Portland, Tenn.
Goodall Clinic-Hospital, Smyrna, Tenn.
Lowry Clinic Hospital, Sweetwater, Tenn.
Angleton Clinic-Hospital, Angleton, Texas
Veterans Administration Center, Bonham, Texas
Bryan Hospital, Bryan, Texas
G. L. Prince Hospital, Crockett, Texas
Bruce Eye, Ear, Nose and Throat Hospital, Greenville, Texas
Boyd Sanitarium, Hillsboro, Texas
Children's Hospital and Clinic, Lamesa, Texas
Lillian M. Hudspeth Memorial Hospital, Sonora, Texas
Young Medical Center, Sweetwater, Texas
Leon Memorial Hospital, Tomball, Texas
Guggenheimer Memorial Hospital, Lynchburg, Va.
Community Hospital, Martinsville, Va.
Garfield County Hospital, Pomeroy, Wash.
Memorial Hospital, Pullman, Wash.
Snohomish General Hospital, Snohomish, Wash.
Memorial Hospital, Charleston, W. Va.
Northwoods Hospital, Phelps, Wis.
Tomah Memorial Hospital, Tomah, Wis.
Memorial Hospital of Uinta County, Evanston, Wyo.
Memorial Hospital of Fremont County, Riverton, Wyo.
Clinica Fajardo, Fajardo, P. R.
Clinica Eugenio Fernandez Garcia, Hato Rey, P. R.

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Arch. Internal Medicine, Chicago

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*Further Observations on Use of Triethylene Melamine in Neoplastic Diseases. J. C. Wright, A. Prigot, L. T. Wright and I. Arons.—p. 387.
Klebsiella Pneumoniae Meningitis: Review of Literature and Report of Case with Bacteremia and Pneumonia, with Recovery. A. J. Thompson, E. B. Williams Jr., E. D. Williams and J. M. Anderson.—p. 405.
Further Studies on Relationship of S_f 10-20 Lipoprotein Molecules to Atherosclerosis. T. P. Lyon, H. B. Jones, D. M. Graham and others. —p. 421.
Syphilis: Review of Recent Literature. H. Beerman, W. T. Ford, L. Nicholas and L. Katzenstein.—p. 464.

Clinical Use of Fat Injected Intravenously.—Neither pyrogenic nor other untoward responses were observed when 35 patients were given fat emulsions intravenously. Fifteen of the 35 received 5 to 36 separate infusions; each received at least 500 cc. and several as much as 2,000 cc. at one time. The preparations contained fat in concentrations of 10, 12.5 and 15%, providing 1,100, 1,325, and 1,600 calories per liter. The fat emulsions were prepared by homogenization, utilizing a phosphatide stabilizer and a co-stabilizer in low concentrations. The resulting preparation contains particles averaging less than 1μ in diameter and is stable to autoclaving. The authors point out that an inadequate caloric intake for a short time is not necessarily harmful. However, in the chronically ill patient reserves of fat are at a minimum. If total parenteral feeding is needed for a prolonged period, a patient's survival may depend on the number of calories that can be administered, and fat given intravenously may play a decisive role. A case is reported to illustrate this. A liter of fat emulsion providing 1,600 calories can be given in 120 minutes or less. Clearance of fat from the blood stream usually is complete after four or five hours. There was no clinical evidence of ketosis during or after fat administration, and among the hundreds of patients who have received fat intravenously, there never has been a fatality attributable to the preparation. Liver function tests have failed to disclose evidence of liver damage due to the fat preparation. Untoward effects have been observed previously. Certain batches of fat emulsion have proved pyrogenic, others nonpyrogenic. Nausea, followed occasionally by transient vomiting has been a rare occurrence. Other side-effects have included transient flushing of the face and neck and moderate fluctuations in blood pressure. Apparently tachyphylaxis occurs after a small amount of the preparation has been administered, and the vasomotor reactions do not recur with early subsequent administration of the fat emulsion. Most of the untoward effects described are probably due to occasional impurities.

Use of Triethylene Melamine in Neoplastic Diseases.—In a previous report Wright and associates had demonstrated that triethylene melamine, which was developed for crease-proofing cloth and showed growth-inhibitory properties in tumors in animals, had beneficial effects in the treatment of 14 human beings with neoplastic diseases. In this paper they report on the use of this chemotherapeutic agent in an additional 28 adults with neoplastic diseases. Improvement was observed in 18 of the 42 patients. No beneficial results were observed in 24 patients. The most dramatic improvement was noted in patients with lymphosarcoma, Hodgkin's disease, chronic myelogenous leukemia, and chronic lymphatic leukemia. Moderate improvement occurred in patients with fibrosarcoma, reticulum cell sarcoma, and mycosis fungoides. No improvement was observed in patients with carcinoma. A close correlation was observed between the reaction of human tumors in tissue culture subjected to triethylene melamine and the same tumors in the patients treated with triethylene melamine. The citrovorum factor was used in two cases to correct the leukopenia that developed after treatment with triethylene melamine.

American Heart Journal, St. Louis

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American Journal of Medical Sciences, Philadelphia

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*Preliminary Report of Antirheumatic Action of Heparin and Paritol-C in Gout and Rheumatoid Arthritis. G. W. Howe, C. A. Armbrust Jr., M. D. Levy Jr. and E. L. Wagner.—p. 258.
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Changing Concepts of "Xanthomatous Biliary Cirrhosis." H. Shay and C. Harris.—p. 286.
Review of Literature on Preoperative Prophylaxis of Bowel with Antibacterial Agents. M. I. Riddell.—p. 301.
Biological and Social Sciences in Epidemiology of Mental Disorder. J. E. Gordon, E. O'Rourke, F. L. W. Richardson Jr. and E. Lindemann.—p. 316.

Radioiodine in Diagnosis of Thyroid Disease.—Initial history and physical examination, basal metabolic rate, serum cholesterol level, radioiodine uptake by the thyroid at 24 hours, and radioiodine urinary excretion level at 24 hours were the diagnostic methods employed in 135 men and 6 women between the ages of 21 and 69 with syndromes suggesting disturbances of

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Titles marked with an asterisk (*) are abstracted.

thyroid function. Of the 141 patients, 100 were euthyroid persons, 37 hyperthyroid, and 4 hypothyroid. The disproportionate number of women is accounted for by the predominantly male character of the Veterans Administration Hospital population. The two radioiodine tracer techniques were evaluated as aids to the clinician in the diagnosis and differential diagnosis of thyroid malfunction in the patients reported on, and the diagnostic accuracy of the radioiodine uptake and excretion tests was compared with that of the initial history and physical examination, the basal metabolic rate, and the serum cholesterol level. Results showed that the radioiodine tracer tests, for which doses of 50 to 100 μc of I^{131} were employed, proved far superior to the basal metabolic rate and serum cholesterol determinations, which give only limited aid in differential diagnosis of thyroid dysfunction because endocrine, neuropsychiatric, and cardiovascular disorders often masquerade as diseases of thyroid origin. Despite the use of radioiodine tracer tests, hyperthyroidism and euthyroidism could not be differentiated in a certain number of persons. This appears to be due to extraneous factors and not to biological variations in function of the thyroid gland. There is still need for a method of direct measurement of the iodine-accumulating function of the thyroid that is independent of extraneous factors such as renal function. Diagnostic accuracy with radioiodine tracer methods may be improved by further study of thyroid iodine clearance rate rather than by refining the precision of available methods. A consideration of safe dosage factors is included.

Anticoagulant Treatment in Gout and Rheumatoid Arthritis.—The anticoagulants heparin and a polysulfuric acid ester of polyanhydromannuronic acid (paritol-C®) were used in the treatment of 13 patients with various rheumatic disorders. Of the 13 patients, 5 had acute, nontophaceous gouty arthritis, 6 had active subacute rheumatoid arthritis, and 2 had acute nonspecific arthritis. Heparin was given subcutaneously in doses of 200 to 300 mg. every 12 hours. Paritol® was injected intravenously in doses of 3 to 4 mg. per kilogram of body weight in 5 or 10% solution every 12 to 24 hours for varying periods, depending on the response. Complete remission of clinical signs and symptoms occurred in the five patients with gout, one of whom had been unresponsive to classical therapy. Five of the six patients with rheumatoid arthritis reported subjective improvement with either heparin or paritol.® Four patients showed objective improvement in 40 to 96 hours, manifested by a decrease in swelling of actively involved joints. One patient had no decrease in swelling while receiving heparin, but responded to paritol.® The anticoagulant drugs heparin and paritol® thus have a definite antirheumatic effect. The mechanism of their action is unknown.

American Journal of Surgery, New York

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*Failure of Neomycin as Adjuvant to Streptomycin in Tuberculous Meningitis. T. L. Perry.—p. 325.
Tuberculosis of Myocardium: Report of Case Exhibiting Changing Types of Heart Block. I. Rose.—p. 332.
Agranulocytosis Due to Amithiozone Therapy. D. V. Preheim and M. E. Peck.—p. 339.

Failure of Neomycin in Tuberculous Meningitis.—Three children between the ages of 2 and 4 years with tuberculous meningitis were treated with 0.25 gm. of neomycin B, containing 240 Waksman units per milligram, intramuscularly every 12 hours for 26 to 39 days. Each patient also was given streptomycin, 1 gm. intramuscularly every 24 hours, and two patients received in addition 25 mg. intrathecally every 24 hours. There was no evidence that neomycin supplemented the therapeutic action of streptomycin. Death occurred sooner than might have been expected had streptomycin alone been used for the treatment of tuberculous meningitis. An ototoxic effect of neomycin was not observed. One patient showed local irritation at the sites of neomycin injection. While none of the patients had demonstrable nitrogen retention during life, postmortem examination revealed that in each case neomycin had produced a severe toxic nephrosis, characterized by necrosis and sloughing of the proximal tubular epithelium. Until less toxic samples of neomycin can be prepared, this drug does not appear to have a place in the treatment of even this most deadly form of tuberculosis.

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Effects of Work on Pulmonary Circulation in Mitral Stenosis. H. Eliasch, G. Wade and L. Werkö.—p. 271.

Serum Cholinesterase Activity and Arterial Blood Pressure. L. J. Vorhaus II.—p. 279.

Dihydrogenated Ergot Alkaloids in Treatment of Essential Hypertension. H. J. Dupuy, J. Signorelli and A. M. Attyah.—p. 285.

Abdominal Aortic Aneurysm with Rupture into Inferior Vena Cava. W. N. Viar and T. A. Lombardo.—p. 287.

Surgery for Mitral Stenosis. Review of Progress. E. F. Bland.—p. 290.

Acute Atypical Coronary Artery Insufficiency.—The greatest difference between acute atypical coronary disease (coronary failure, subendocardial necrosis, and small or obscure myocardial infarctions) and classic myocardial infarction is the lower death rate and benign course of the atypical forms. Coronary failure occurs when an inelastic coronary system is unable to meet increased demands. The actual process is believed to be a prolonged but reversible myocardial ischemia. The pain it causes is severer and more lasting than that of angina pectoris and is not relieved by rest or glyceryl trinitrate (nitroglycerin). Blood pressure is maintained and friction rubs do not develop. Electrocardiographic changes either do not occur or are slight and transient, as in angina. Subendocardial necrosis without coronary occlusion commonly occurs when the coronary vessels are sclerotic and only rarely when they are normal. Stimuli such as emotion, hemorrhage, shock, sustained effort, tachycardia, toxic substances, or further coronary narrowing may lead to a state of myocardial hypoxia, which, if not promptly relieved, goes on to persistent cardiac pain and eventual necrosis of heart muscle. Destructive changes occur in papillary muscles and in the central myocardium, where the blood flow is low. The endocardial injury may be diffuse or focal, but the endocardial lining is spared and there is no mural thrombosis. The outer myocardium remains intact and pericardial phenomena do not develop. Electrocardiographic changes, consisting of S-T segment depressions with or without T-wave inversions, are said to be diagnostic. Atypical myocardial infarction is characterized by pain that begins without relation to physical effort and lasts for more than 15 minutes. There is no heart failure or peripheral shock. Symmetric T-wave inversions that persist indefinitely appear in the electrocardiogram, either initially or, oftener, slowly over a period of days or weeks. Analysis of 207 consecutive cases of acute coronary artery insufficiency showed 59 atypical forms: 29 cases of coronary failure, 19 of subendocardial necrosis, and 11 of atypical myocardial infarction. Differentiation should be based on electrocardiographic interpretation and treatment should be individualized accordingly. Serious disease necessitates long bed rest and the protection of anticoagulants, but forms of coronary insufficiency with a low mortality and few complications do not need prolonged hospitalization or treatment. The degree of cardiac neurosis suffered by coronary disease patients is directy related to the length of hospitalization.

Therapeutic Range of Amorphous "Gitalin".—Amorphous "gitalin" (a digitalis glycoside) has a greater therapeutic range than other digitalis preparations and can be used with greater safety for either initial digitalization or maintenance. The percentage of a digitalis preparation required for a therapeutic effect in terms of the total dose required for toxicity represents the therapeutic ratio; the smaller the ratio the greater the range. The usual patient with congestive heart failure requires approximately 60% of the toxic dose of either digoxin or digitoxin, which have similar ratios, to attain a therapeutic effect. Patients with advanced heart disease may require doses approaching or equalling the toxic dose, so that the therapeutic range is reduced or even abolished. The greater therapeutic range of amorphous "gitalin" (therapeutic dose approximately one-third of the toxic dose) makes digitalization attainable in many of these difficult cases; only when toxicity is manifested before any therapeutic effect becomes discernible does satisfactory digitalization become impossible. The dissipation rate of amorphous "gitalin" lies between those of digoxin and digitoxin; this facilitates satisfactory maintenance. Inadequate maintenance resulting from rapid dissipation, as in the case of digoxin, is unlikely, and any manifestations of toxicity will subside more quickly than those noted with digitoxin. Amorphous "gitalin" has a high degree of uniformity in potency and absorption, assuring satisfactory digitalization and maintenance with predictable doses. The authors believe these advantages make "gitalin" the digitalis preparation of choice in congestive heart failure.

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Dynamics of Ventricular Contraction Under Abnormal Conditions. C. J. Wiggers.—p. 321.

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*Alcohol Vapor by Inhalation in Treatment of Acute Pulmonary Edema. A. A. Luisada, M. A. Goldmann and R. Weyl.—p. 363.

Comparison of Circulatory Effects of Epinephrine and Norepinephrine. K. G. Wakim and H. E. Essex.—p. 370.

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Influence of Thyroidal Function on Vascular Reactivity in Dogs. I. H. Page and J. W. McCubbin.—p. 390.

Effect of Athyroid State on Vascular Reactivity and Arterial Pressure in Neurogenic and Renal Hypertensive Dogs. J. W. McCubbin and I. H. Page.—p. 397.

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Newly Modified Electromagnetic Blood Flowmeter Capable of High Fidelity Flow Registration. A. W. Richardson, A. B. Denison Jr. and H. D. Green.—p. 430.

Effect of Posture on Hypertension Induced by Sympathomimetic Amines in Man. A. Littman, R. M. Gunnar, M. I. Grossman and R. Casas. —p. 437.

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Rupture of Aortic Aneurysm into Pulmonary Artery: Case Report. C. H. Carter, W. N. Agostas and V. P. Sydenstricker.—p. 449.

Needless Restrictions Imposed on Cardiac Patients. R. L. Levy.—p. 454.

Inhalation of Alcohol Vapor in Acute Pulmonary Edema.—The high mortality associated with conventional methods of treating acute pulmonary edema and the fact that they are contraindicated in shock, the presence of central nervous lesions, or pregnancy led to trials with antifoaming agents by inhalation. Four methods of alcohol inhalation were tried. The two most practical employed a nasal catheter and a positive pressure mask. The amount of alcohol in the blood was small and its general effects were negligible. Alcohol vapor was administered to 14 patients during 17 acute attacks of pulmonary edema. In all except three cases alcohol was given after failure of routine medication. In 10 of the attacks the beneficial effect was prompt and marked; in five others there was definite improvement. No improvement was noted in two attacks but in one the patient did not tolerate alcohol, and in the other the patient objected to alcohol at first and possibly received an inadequate dose. One patient died four hours after treatment was discontinued. Alcohol vapor was also administered to seven patients with severe prolonged pulmonary edema. Marked improvement occurred in one, slight to moderate improvement in two, and doubtful result or no improvement in four. In three, evidence of decrease of the foaming process was noted even though the fatal course of the underlying disease was not modified. This study indicates that alcohol inhalation has a favorable effect in clinical pulmonary edema, particularly of the acute paroxysmal variety.

Serum Lipoproteins and Atherosclerosis in Rabbits.—By means of the analytic ultracentrifuge several classes of giant, cholesterol-bearing lipoproteins have been identified in the serum of humans and animals. The S_f 10-20 class of molecules has been correlated with atherosclerosis in humans, and a corresponding S_f 10-30 class has been observed in rabbits with atherosclerosis. Normal rabbits have a negligible concentration of lipoproteins in their serum, with the exception of the S_f 3-12 class, but when they are fed cholesterol, the lipoproteins of the S_f 3-12 class increase progressively in concentration until a critical value is reached. Then lipoproteins of successively higher S_f classes begin to appear, and finally the entire spectrum of lipoproteins is present in large quantity. Duff and others had noted extreme turbidity of the serum and elevation of the cholesterol level in the alloxan-diabetic rabbit fed cholesterol, and yet atherosclerosis does not develop. Experiments described in this paper revealed that the alloxan-diabetic rabbit that is fed cholesterol develops extreme lipemia and hypercholesteremia and still has a smaller degree of atherosclerosis than a normal rabbit that is fed cholesterol, that is, there is a negative correlation between atherosclerosis and serum cholesterol levels. There is, however, a positive correlation between the presence of lipoproteins of the S_f 12-30 class and atherosclerosis in these animals. No other class of lipoproteins correlates as well with atherosclerosis as does the S_f 12-30 class, and, in fact, a significant negative correlation exists between atherosclerosis and lipoproteins of S_f greater than 100. The high correlation between total serum cholesterol and lipoproteins of S_f greater than 100 in the alloxanized rabbit, together with the high proportion of cholesterol transported in this form, provides an explanation of lack of positive correlation between serum cholesterol and atherosclerosis. Molecules above S_f 100 are intensely light-scattering and, since they are generally in high concentration in the serum of the alloxanized rabbit fed cholesterol, the extreme turbidity is explained. The alloxan diabetic animal seems to have a metabolic block in the conversion of lipoproteins of S_f 80-100 and above into lipoproteins of lower S_f classes.

Journal of Clinical Investigation, Cincinnati

31:1-130 (Jan.) 1952. Partial Index

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Journal of Experimental Medicine, Baltimore

95:231-332 (March) 1952

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Isolation and Identification of Para-Aminobenzoic Acid Produced by Staphylococci Resistant to Sulfonamide. S. Leskowitz, C. L. Fox Jr. and S. Raymond.—p. 247.
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Factors Related to Growth of Psittacosis Virus (Strain 6BC): I. Pteroylglutamic Acid, Vitamin B_{12}, and Citrovorum Factor. H. R. Morgan. —p. 269.
Id.: II. Purines, Pyrimidines, and Other Components Related to Nucleic Acid. H. R. Morgan.—p. 277.
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Experiments on Cause of Rabbit Carcinomas Derived from Virus-Induced Papillomas: I. Propagation of Several of the Cancers in Sucklings, with Etiological Tests. W. E. Smith, J. G. Kidd and P. Rous. —p. 299.
Evidence That Aschoff Bodies of Rheumatic Myocarditis Develop from Injured Myofibers. G. E. Murphy.—p. 319.

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Psychotherapeutic Problems with University Students. S. H. Kaufman. —p. 142.
Medical Editors and Their Work. R. M. Hewitt.—p. 145.
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Journal of Nervous and Mental Disease, New York

115:189-282 (March) 1952

Effects of Frontal Topectomy on Autonomic Nervous System Stability in Schizophrenia. G. H. Glaser.—p. 189.
*The Frontal Lobes and Anguish: New Formulation of an Old Problem. C. Landis.—p. 203.
Psychology vs. Anatomy in Treatment of "Arm Neuroses" with Physiotherapy. T. Braatoy.—p. 215.
Artificial Ecstasy: Study of Psychosomatic Aspects of Drug Addiction. J. A. M. Meerloo.—p. 246.

The Frontal Lobes and Anguish.—Landis shows that psychosurgery has altered previous concepts of the functions of the human frontal lobes. The crucial change in persons who respond to psychosurgery is affective rather than intellectual. The significant alteration resulting from psychosurgery is a diminution in morbid emotionality, awareness, and zeal. The patients are more easygoing and lazy. The author refers to the change as a reduction in apprehensive dread or anguish. He also shows that anguish may be relieved in many mental patients by methods other than psychosurgery, particularly by the so-called shock methods of insulin, metrazol, and electroconvulsive therapy, by intravenous injection of certain of the barbiturates, or by psychotherapy. Some mental patients lose anguish spontaneously. This implies that anguish cannot be dependent on a specific frontal lobe area of tissue or a pattern of interconnected portions of tissue, for, if it were, the removal of tissue or cutting of interconnecting tracts would irrevocably remove the specific experience. Instead, if anguish returns, it takes the same form, that is, there is a relapse into psychosis or neurosis, or intractable pain. Since anguish cannot be associated with a specific portion of the brain, the author advances the theory that anguish depends on an undue physiological responsiveness of brain tissue to some agent carried to the brain by the blood stream. Since the agent is still hypothetical, the author refers to it as alpha. This agent sensitizes cortical tissue in persons who are susceptible, the susceptibility being activated largely by the influx of intraorganic sensory impulses probably projected from the thalamic nuclei.

Since electroconvulsive therapy often results in a loss or a great diminution of anguish, and since this therapy is widely used in the treatment of thousands of mentally ill patients, Landis suggests that an intensive interview study coupled with psychophysiological measurement of the temporal efficiency of the central nervous system before and after electroconvulsive therapy *might* yield interesting results.

Kansas Medical Society Journal, Topeka

53:45-104 (Feb.) 1952

- X-Ray Pelvimetry in Private Practice. N. C. Siebert and C. M. White.—p. 45.
- Field of Allergy. E. A. Brown.—p. 49.
- Water Fluoridation for Partial Control of Dental Decay in Children's Teeth. W. R. Bellinger.—p. 54.
- Neurovascular Syndromes of Shoulder Girdle. F. S. Morest.—p. 57.

Michigan State Medical Society Journal, Lansing

51:145-264 (Feb.) 1952

- General Adaptation Syndrome. B. C. Lockwood.—p. 181.
- Myotonia Congenita: Report of Four Cases in One Family; One with Autopsy Findings. W. H. Gordon, J. M. Kaufman and H. A. Kashton.—p. 188.
- Political Vandalism Versus the Rights of the Individual. C. E. Umphrey.—p. 195.
- Medicine is Arming for Atomic Defense. M. L. Lichter.—p. 200.
- Pediatric Problems Arising from Atomic or Biological Warfare. F. H. Top.—p. 203.
- Care of Cancer Patient. H. M. Nelson.—p. 209.
- Hematoma of Rectus Abdominis Muscle During Pregnancy. M. S. Dennis.—p. 211.
- Surgical Treatment of Pain. J. Martin.—p. 213.
- First Use of Epinephrine (Adrenalin®) in Asthma. W. Haughey.—p. 216.
- Know Your Government. J. B. Martin.—p. 217.

Military Surgeon, Washington, D. C.

110:165-248 (March) 1952. Partial Index

- Symposium on Effects of Atomic Explosions. L. D. Cady and J. E. Miller.—p. 165.
- Diarrheal Diseases in Military Medicine: Their More Effective Control in Forward Areas. R. A. Kern.—p. 171.
- Surface Area Determinations of Three Prostatectomy Procedures. C. Ferguson and L. S. Santomieri.—p. 175.
- Infection in Urinary Tract Calculi—Incidence and Management. J. C. Kimbrough and W. H. Morse.—p. 177.
- Addison's Disease in Two Brothers; With Serum Hepatitis in One. T. W. Smith and A. R. Higgins.—p. 180.
- Physiologic and Pathologic Effects of Implanted Body Armor Materials. S. W. Handford and F. J. Lewis.—p. 184.
- *Relationship of Underarm Cosmetics to Hydradenitis Axillaris. L. Wirth.—p. 208.
- Shoulder Straps for Aesculapius. J. E. King and D. F. Shea.—p. 209.

Underarm Cosmetics and Hydradenitis Axillaris.—Wirth believes there is frequently a causal relationship between abscess of the axillary sweat glands and the use of underarm cosmetics. He bases this belief on observations in 20 patients (12 women and 8 men) with hydradenitis axillaris, all of whom used underarm cosmetics. Two of them used a perfumed powder, while the remaining 18 used antiperspirants. Two patients were seen on a second occasion for the same condition, after they had resumed the use of a different antiperspirant. While the fact that all 20 patients had used underarm cosmetics is suggestive of a causal connection, it does not prove that the cosmetics caused the apocrine abscess. However, the predominance of women among patients with axillary hydradenitis in this and other reports is regarded as further proof of a causal role of underarm cosmetics, since more women than men use them.

Nebraska State Medical Journal, Lincoln

37:65-92 (March) 1952

- Masking of Clinical and Hematological Findings by Cortisone and ACTH in Acute Leukemia in Childhood: Case Report. J. E. Meyer and F. H. Tanner.—p. 67.
- Preparation of Thyrotoxic Patient for Operation. W. P. Kleitsch.—p. 68.
- Case Report of Familial Polyposis of Colon. S. F. Moessner and R. G. Rice.—p. 73.
- Neonatal Deaths and Stillbirths. S. T. Thierstein.—p. 76.
- BCG Vaccination. W. J. Dickerson.—p. 78.
- Public Health Education in Nebraska. N. Lamkin.—p. 80.

New England Journal of Medicine, Boston

246:281-316 (Feb. 21) 1952

- Ebbs and Flows in Medical Interest. H. A. Christian.—p. 281.
- Femoral-Shaft Fractures Treated by Medullary Nailing. E. F. Cave.—p. 284.
- Chronic Pyelonephritis Simulating Adrenocortical Insufficiency. H. E. Nussbaum, W. G. Bernhard and V. D. Mattia Jr.—p. 289.
- *Guillain-Barré Syndrome: Report of Case Treated with ACTH and Cortisone. J. S. Stillman and W. F. Ganong.—p. 293.
- Comparison of Clinical Features of Poliomyelitis in Adults and in Children. L. Weinstein, A. Shelokov, R. Seltser and G. D. Winchell.—p. 296.

Corticotropin and Cortisone in Guillain-Barré Syndrome.—A variety of descriptive terms have been applied to the syndrome of diffuse peripheral neuropathy associated with albuminocytologic dissociation in the spinal fluid, including infectious neuritis, radiculomyelitis, polyneuritis with facial diplegia, and acute febrile polyneuritis. Stillman and Ganong feel that until the condition is better understood, there will be less confusion if the old term Guillain-Barré syndrome is continued. They describe the case of a man, aged 59, who had the syndrome and who was given corticotropin (ACTH). The patient showed improvement, but relapsed when his adrenal glands became unresponsive to this agent and again improved on cortisone. The response of this patient, in addition to other evidence, supports the hypothesis that some cases of the Guillain-Barré syndrome represent an allergic response of the nervous system to bacterial products. It is suggested that this reaction causes congestion and edema of the nerve roots, with secondary compression in their inelastic dural sheaths, and that adrenal steroids produce resorption of this edema and permit axon recovery, the speed of recovery depending on the duration of the compression.

Surgery, St. Louis

31:327-486 (March) 1952

- Ten Years' Experience with Bleeding Peptic Ulcer with Emphasis on 45 Fatal Cases. N. Shapiro and L. Schiff.—p. 327.
- Surgical Intervention in Massive Gastroduodenal Bleeding. F. H. Amendola.—p. 340.
- Role of Trypsin in Pathogenesis of Acute Hemorrhagic Pancreatitis and Effect of Antitryptic Agent in Treatment. B. Rush Jr. and E. E. Cliffton.—p. 349.
- Effect of Simultaneous Oral Administration of Aureomycin and Aluminum Hydroxide Gel on Fecal Urobilinogen. W. D. Hayford and B. A. Waisbren.—p. 361.
- Prophylactic Use of Terramycin in Experimental Clostridium Welchii Infection in Guinea Pigs. W. R. Sandusky, C. F. Keeble, W. P. Wharton and R. N. Taylor.—p. 365.
- Fibrotic Stenosis of Terminal Common Duct. P. F. Partington.—p. 367.
- Occurrence in Surgical Patients of Severe Hypernatremia Without Exogenous Dehydration. B. Zimmermann and E. F. Freier.—p. 373.
- *Carotid Body Tumors. J. W. Hendrick.—p. 385.
- Autogenous Vein Grafts in Splenorenal Anastomosis: Description of Technique and Its Clinical Application in Seven Patients. L. M. Rousselot.—p. 403.
- Experimental Studies with Intra-Arterial Transfusion: Overtransfusion of Normal Dog. E. J. Beattie Jr., J. R. Thistlethwaite, B. Blades and O. Wood.—p. 411.
- Spinal Anesthesia: Analysis of Causes of Death in 716 Cases. P H. Lorhan and W. Merriam.—p. 421.
- *Agenesis of Right Lung: Report of Three Cases. L. B. Thomas and E. A. Boyden.—p. 429.
- Intraintestinal Hemorrhage Following Total Pancreatectomy for Carcinoma of Pancreas: Report of Case. R. C. Lynch and D. M. L. Rosenberg.—p. 436.
- Fibrosarcoma of Soft Somatic Tissues: Clinical and Pathologic Study. G. T. Pack and I. M. Ariel.—p. 443.

Carotid Body Tumors.—Tumors of the carotid body are located deep beneath the sternomastoid muscle in the bifurcation of the carotid artery at approximately the level of the hyoid bone. Essentially asymptomatic, and of a reddish brown color, they grow slowly, encircling the carotid vessels as they enlarge. They are unilateral or occasionally bilateral, and occur in both sexes at any age. Pain in the face, neck, and area of the middle ear, hoarseness, and occasionally dsyphasia were the symptoms of the author's eight patients. In two of them microscopic examination revealed malignant change. Any slow-growing, painless tumor, 1 or 2 to 10 cm. in diameter, located deep in the upper anterior cervical triangle should be assumed to be a carotid body tumor unless proved otherwise. Roentgenograms are not, as a rule, a diagnostic aid. Differential diagnosis should be made from bronchogenic cysts, aneurysm of the carotid artery, carcinoma, neurofibroma, metastases from carcinoma of the homologous lobe of the thyroid gland or from lesions above or below the clavicle, and tuberculous lymphadenitis. Small tumors of the carotid body that are diagnosed early may be removed without injury to, or ligation of, the common or internal carotid artery or both, whereas these may have to be ligated or resected when the tumors are larger or malignant. Systematic preoperative digital compression of the common carotid vessel at first for two or three minutes three to four times daily increasing gradually up to ten minutes four or five times daily is suggested to improve collateral circulation to the brain, thus minimizing the risk of hemiplegia. Anticoagulants may be useful as adjuvant therapy. During the operation on his patients the author injected a 1% procaine solution into the adventitia of the common carotid artery, and, in cases of larger tumors, into the stellate ganglions and the first and second cervical ganglions. The two patients with malignant tumors in whom he performed a radical neck dissection are both well more than five years after the operation. In bilateral tumors of the carotid body the more advanced of the two should be removed first. The effectiveness of roentgen therapy on these tumors is debatable. It may be indicated when a benign tumor cannot be removed without ligation or removal of the common or internal carotid artery.

Agenesis of Right Lung.—Agenesis of the right lung was found in three patients at the University Hospital of Minnesota during 1950-51. Death occurred in a 2-year-old boy during the removal of a kernel of corn from a bronchus. At autopsy the right lung and the right pleura were absent, and dissection of the enlarged left lung revealed three lobes with a cleft upper lobe. The second patient, a 16-day-old twin baby girl, died during operation for a tracheoesophageal fistula. At autopsy the left lung had a normal shape and three lobes; a cleft upper lobe was associated with an ectopic left pulmonary artery. The third patient, a full-term male infant, died one and one-half hours after birth. Autopsy revealed absence of the right lung and pleura and a constriction of the right ureter just below the ureteropelvic junction. There was also an additional digit at the base of the left thumb. Dissection revealed an incompletely divided left lung, with atypical branching of the bronchial tree, a rudimentary appendix at the site of bifurcation of the trachea (probably right bronchial bud), a retrobronchial left pulmonary artery, and coarctation of the aorta. The pronounced deviations in the bronchovascular patterns of the only lung and the association with congenital anomalies suggested that in these patients the process of normal development had been interfered with at the first lunar month. It was impossible to determine whether suppression of the right lung was caused by a genetic factor, a defective gene, or by an environmental factor such as a dietary deficiency in the mother that disturbed the chemistry of development.

Virginia Medical Monthly, Richmond

79:121-176 (March) 1952

Recognition and Management of Hypoglycemic States with Particular Reference to Islet Cell Tumors of Pancreas. C. G. Gaddy, W. Parson and H. B. Mulholland.—p. 124.
Expanding Field of Splenectomy for Hypersplenism. T. Fitz-Hugh Jr. and P. R. Evans Jr.—p. 132.
*Colitis Following Oral Administration of Aureomycin and Terramycin. C. C. Chewning Jr.—p. 136.
Prevalence of Microsporon Audouini Infections of Scalp in Charlottesville, Virginia. C. J. Young and D. C. Smith.—p. 138.
Electrocardiogram in Childhood. N. Bloom.—p. 140.
Fight Against Cancer and Some Other Chronic Diseases. C. C. Coleman and J. M. Hutcheson.—p. 145.
Melorheostosis Leri—Report of Case. W. M. Fitch and I. M. Bordelon.—p. 147.
Analysis of Cesarean Sections in General Hospital. S. E. Smith Jr. and J. R. Kight.—p. 149.

Colitis Following Oral Aureomycin and Terramycin.—Toxic reactions to aureomycin and terramycin administered orally include colitis, which is sometimes mild but frequently is severe enough to require hospitalization for three to four weeks. Proctoscopic findings showed erythema and edema of the rectal and sigmoidal mucosa in mild cases; in cases of moderate severity the mucosa was mottled, edematous, and friable, bleeding easily. The patients with severest disease showed multiple ulcerations, the lumen of the bowel containing pus, mucus, and blood. Pus and blood cells were found in the feces in the severe cases. Treatment for the mild forms consisted of paregoric or kaolin (kaomagma®) and paregoric given every four hours. The diet was bland, fat-free, and somewhat restricted in quantity. Patients requiring hospitalization received little or no food by mouth for two or three days. Intravenous feedings were given as needed. Paregoric or other opiates were used rather freely. Diarrhea and abdominal discomfort lasted several days to four weeks in the milder cases and two to four weeks in the severer ones. Recovery was complete. No satisfactory explanation of the pathogenesis of this colitis, which usually develops in from 3 to 14 days after discontinuance of the antibiotic, has yet been found. Effective methods of prevention and treatment have not been developed. The frequency of complications with aureomycin and terramycin therapy indicates that these medications should be restricted to cases in which they are unequivocally indicated.

Yale Journal of Biology and Medicine, New Haven

24:243-350 (Feb.) 1952. Partial Index

Laboratory and Community in Undergraduate Training of a Physician. J. M. Mitchell.—p. 252.
Self-Regulatory Feeding in Premature Nursery. F. H. Horton, L. O. Lubchenco and H. H. Gordon.—p. 263.
Vitamin D and Citrate Metabolism: Studies on Rachitic Infants. H. E. Harrison and H. C. Harrison.—p. 273.
Variations in Gag, Cough, and Swallow Reflexes and Tone of Vocal Cords as Determined by Direct Laryngoscopy in Newborn Infants. H. C. Miller, G. O. Proud and F. C. Behrle.—p. 284.
Studies in Congenital Cardiovascular Disease: IV. Impaired Pulmonary Diffusion of Oxygen in Persons with Left-to-Right Shunts. N. K. Ordway.—p. 292.
Tuberculous Meningitis in Children: Addition of 41 Proven Cases: Critical Analysis of Literature Dealing with Streptomycin Therapy Since Its Introduction. R. W. Sappenfield, V. G. Robinson and D. N. Walcher. —p. 309.
Passive Immunity to Vaccinia in Newborns: I. Placental Transmission of Antibodies. C. H. Kempe.—p. 328.
*Behavioural Response of Infants to Heat Stress. R. E. Cooke.—p. 334.

Response of Infants to Heat Stress.—In order to ascertain the influence of environmental temperature on food and water intake of infants, six normal infants ranging in age from 14 to 231 days were studied with no clothing except diapers in a room of controlled temperature, for periods of 20 to 180 days. The same nursing personnel provided a fairly satisfactory emotional environment for the babies. A program for complete ad libitum feeding of young infants both with respect to time and volume of feeding was followed. This program consisted of feeding the infant whenever hungry and offering as much as would be taken without urging. The criteria for deciding that an infant was hungry were active crying, not abolished by holding or changing of diapers, active sucking movements, and/or extreme restlessness and activity. At each feeding, boiled water was offered prior to the milk mixture. The infant was allowed to drink as much water as desired until the nipple was repeatedly rejected, and then a milk mixture was substituted. The baby was allowed to drink as much milk as desired until the nipple was again consistently rejected. Bottles of water and milk mixture were accurately weighed before and after each feeding. The environmental temperature was kept at 81 F during the control periods and at 91 F during the hot periods. The relative humidity ranged from 40 to 50%. An increase in water intake and fall in milk intake were noted on exposure to heat stress. The converse occurred when the room temperature fell. These reactions were less marked in the younger infants. The data obtained from these experiments suggest certain considerations of practical value in the care of infants in summer. Dilute feeding mixtures (50 calories per 100 cc., for example) should be used during heat stress rather than concentrated milk mixtures supplemented by water offered ad libitum after feedings, as is commonly practiced. By the use of a dilute feeding mixture an adequate intake of water in relation to calories, protein, and electrolytes is assured.

FOREIGN

Acta Chirurgica Scandinavica, Stockholm

102:321-404 (No. 5) 1952. **Partial Index**

*Hiatal Hernia, Brachyoesophagus and Incompetence of Cardia in Children. G. Pettersson.—p. 321.
Treatment of Congenital Atresia of Esophagus: Principles of New Method with Preliminary Case Reports. G. Pettersson and G. Haglund.—p. 327.
Congenital Atresia of Small Intestine in Children. G. Pettersson.—p. 331.
Treatment of Extroversion of Bladder with Coexisting Anal Incompetence. G. Pettersson.—p. 338.
*Cerebral Revascularisation: Critical Evaluation of 14 Operated Cases. I. Selley, G. Pettersson, H. Larsson and others.—p. 342.
Massive Brain Damage After Acute Anoxia. G. Haglund.—p. 364.
Development of Cancer in Gastric Ulcer and Ulcer Symptoms in Gastric Cancer. T. Ekström.—p. 387.

Incompetence of Cardia in Children.—The causes of vomiting in childhood are numerous and often difficult to determine. Disturbances in the cardia, the lower esophagus, and the closing mechanism of the cardia may play a part. If the cardial mechanism is disorganized, incompetence of the cardia develops. As a consequence, the acid stomach contents flow up into the esophagus, and esophagitis and peptic ulceration develop. The inflammatory changes and ulceration produce scar formation, i. e., transverse strictures and longitudinal shortening of the esophagus (brachyesophagus). The author distinguishes two types of incompetence of the cardia. In the first type, which he designates as simple cardial insufficiency, the anatomical relation of the three closing mechanisms is largely unchanged, dilatation or laxity of the cardia due to imbalance of its neurogenic control being the chief factor. In the second type, however, the closing mechanisms become disorganized and hiatal hernia and brachyesophagus exist. The diagnosis is based on the chief symptom, vomiting, and on the result of roentgenologic examination. The latter shows reflux of the radiopaque substance into the esophagus when the patient is in the horizontal or Trendelenburg position. In hiatal hernia the normal fundus bubble is often absent, and the stomach continues like a tent or an inverted funnel through the diaphragm. Of the eight cases reviewed by the author, two had the simple form of insufficiency. At the age of 14 months and 6 months, respectively, these patients were subjected to thoracotomy with narrowing of the hiatus. Crush of the phrenic nerve alone resulted in competence of the cardia and disappearance of the symptoms in three of the six children with hiatal hernia plus brachyesophagus. In the other three cases thoracotomy plus reposition of the stomach was performed. In two of these cases the phrenic nerve was also crushed. All patients are free of symptoms. Crush of the phrenic nerve had no effect in simple insufficiency of the cardia.

Cerebral Revascularization.—Selley and associates discuss the technique of "revascularization of the brain through establishment of a cervical arteriovenous fistula," which Beck, McKhann, and Belnap reported in September, 1949. These authors were of the opinion that the procedure was "the first successful attempt at correction of mental retardation on an organic basis." Selley and co-workers raise several questions with regard to this treatment and say that they studied the possibility of supplying arterial blood to the brain (revascularization) by means of arteriovenous shunt formation in 14 children with brain lesions. In three children a side-to-side anastomosis between the common carotid artery and the internal jugular vein, as suggested by Beck, was done, while in the others end-to-side anastomosis between the external carotid artery and the jugular vein was performed. The anatomical possibilities were studied by means of sinographic studies prior to operation. The effect of the shunt on the dynamics of the circulation was examined by means of angiographic studies and oxygen analyses both before and after operation. Psychiatric follow-up examinations in 10 cases revealed no tangible change in the mental condition of the children. As far as intelligence and behavior was concerned, "revascularization" had produced neither favorable nor unfavorable changes, and the authors feel that the operation does not improve the cerebral state in children with brain lesions.

Annals of Physical Medicine, London

1:1-36 (Jan.) 1952

Further Investigations into Effects of Micro-Waves. A. C. Boyle, H. F. Cook and D. L. Woolf.—p. 3.
*Ambulant Treatment of Complications Resulting from Varicose Veins and Allied Conditions. I. H. M. Curwen and B. O. Scott.—p. 17.

Treatment of Complications of Varicose Veins.—A total of 503 outpatients with chronic hypostatic edema, induration, and ulceration resulting from varicose veins and allied conditions were treated in a physical medicine department over a four year period. The majority of these patients had failed to respond to surgical and all other forms of treatment over periods as long as 30 years. The treatment was ambulant, and was designed to control venous stasis, edema, and induration to heal eczema and ulceration. The basic methods used were the wearing of elastic bandages to give support, with local deep friction massage to soften areas of fibrosis and active exercises to promote drainage. Patients were instructed in the technique of treatment, which was then largely carried out at home. Elastic stockings were used to maintain the limb in a healthy condition after healing. Of 427 patients under continuous observation, 366 have been discharged cured. In these the incidence of recurrence was 12.2%. The treatment is recommended as a pre and postoperative regimen and for cases in which surgery is inapplicable or has failed to give relief.

Boletin Cons. Gen. Col. Méd. España, Madrid

12:1-72 (Feb.) 1952. **Partial Index**

Indications and Technique for Surgical Treatment of Gastric Hemorrhage. A. de la Fuente Chaos.—p. 7.
Intracranial Epidermoids (Cholesteatoma). J. M. López-Porrúa and F. E. de Salamanca Jr.—p. 21.
*Khellin in Treatment of Syndromes of Coronary Insufficiency. L. Pescador and B. Martín de Prados.—p. 29.
Terramycin in Treatment of Malta Fever: Three Cases. J. L. Rodríguez-Miñón and J. M. Palacios Mateos.—p. 43.

Visammin in Coronary Insufficiency.—In the department of cardiology of Madrid University, 222 patients with clinical symptoms and electrocardiographic changes indicative of coronary insufficiency were treated with visammin (khellin). Most of the patients had coronary insufficiency. The remainder had coronary calcification, cardiac neurosis, anginal pain due to effort or myocardial infarction, either acute or of old duration. Visammin was given intramuscularly in daily doses of 100 to 300 mg. for one or two days, followed by daily doses orally of 150 to 300 mg. The daily doses were given in two or three divided doses at intervals of 8 to 12 hours. The scheme of treatment for preventing relapses and obtaining permanent cure consisted in maintaining the treatment for from six weeks to six months. In many cases, however, the results of only a day of treatment were so spectacular that the drug was given only at reappearance of pains, which became more and more infrequent or were completely controlled in the aforementioned period. The clinical symptoms disappeared and the electrocardiographic changes improved or disappeared in 71.27% of the total group, while the treatment failed in 3.72%. The 25 patients who received even small doses of papaverine (tetramethoxybenzylisoquinoline) simultaneously with visammin showed acute symptoms of intolerance to the drug, consisting of vomiting, acute vertigo, headache, general discomfort, diarrhea, and marked asthenia with drowsiness. The treatment was discontinued in all such cases. In cases of myocardial infarct visammin therapy was begun after control of acute pain by morphine. The authors conclude that visammin controls symptoms of coronary insufficiency and that papaverine is contraindicated during visammin therapy.

British Journal of Dermatology, London

64:87-128 (March) 1952

Connective-Tissue Naevi. J. R. Prakken.—p. 87.
Multiple Superficial Benign Basal-Cell Epithelioma of Skin: Report of Case with Zosteriform Arrangement of Lesions and Satisfactory Response to Treatment with Thorium X. V. H. Witten and M. P. Lazar.—p. 97.
Sun Heat and Artificial Heat in Relation to Skin Eruptions Due to Local Irritants. H. G. Adamson.—p. 104.
Drug Eruption from Paludrine (Proguanil) Hydrochloride: Report of Case. L. J. A. Loewenthal.—p. 106.

British Medical Journal, London

1:559-614 (March 15) 1952

Antirheumatic Effects of Hydrocortisone (Free Alcohol), Hydrocortisone Acetate, and Cortisone (Free Alcohol) as Compared with Cortisone Acetate. E. W. Boland.—p. 559.
*Proguanil-Resistance in Malayan Strains of Plasmodium Vivax. T. Wilson, D. S. Munro and D. R. Richard.—p. 564.
*Chemotherapy and Chemoprophylaxis of Malaria. Clinical Trials in 500 Cases and Mass Prophylaxis in Hyperendemic Area. R. N. Chaudhuri, N. K. Chakravarty and M. N. R. Chaudhuri.—p. 568.
Atypical Abdominal Tuberculosis with Haematological Manifestations. J. Friend and A. C. Thackray.—p. 574.
X-Ray Appearances in Asthma: Study of 200 Cases. H. Royle.—p. 577.
Treatment of Recent Transcervical Fractures of Femur. D. O. Williams and E. K. McLean.—p. 580.
Kahn Tube Test with Dropping-Pipettes. O. Khairat.—p. 582.

Proguanil Resistance in Malayan Strains of Plasmodium Vivax.—Experiments showed that in doses of 100 to 300 mg. once a week, proguanil, also known as "paludrine" or chloroguanide, effectively suppressed malaria. The British Army in Malaya substituted this drug for quinacrine in 1949. The investigation described here was started when fresh infections of falciparum and vivax malaria occurred late in 1950 among British troops in Malaya. Similar infections occurred in 1951 among troops from a different unit operating in the same areas. The troops were on an official suppressive dosage of 100 mg. of proguanil daily, and suppressive discipline was thought to be good. Treatment of some of the vivax infections revealed that the erythrocytic parasites in these patients were only temporarily suppressed by doses of 300 mg. of proguanil daily for 7 to 10 days. Parasitological and clinical relapses occurred 7 to 17 days after reversion to the normal suppressive dose of 100 mg. daily. One of these patients had been in Malaya only three months and had been on regular suppressive doses of proguanil from the day after arrival. Irregular dosage cannot be excluded as a possible cause of the incidence of malaria in these Army units, but it is thought that some infections may have developed in men who took their suppressive doses regularly. It is suggested that the proguanil-treated vivax patients may have been infected with a strain whose erythrocytic parasites were already partially resistant. If this happens, as seems possible, then controlled experiments are needed to determine whether resistance of erythrocytic forms also implies that pre-erythrocytic forms may complete their development and produce clinical attacks of malaria despite regular prophylactic dosage from the time of infection.

Chemotherapy and Chemoprophylaxis of Malaria.—During the past several years a number of new drugs have been tested at the Calcutta School of Tropical Medicine for their therapeutic and suppressive values in malaria. Patients admitted to the attached hospital were studied, but the main work on the suppressive therapy was carried out in a rural area about 40 miles from Calcutta. As in chemotherapy, so in chemoprophylaxis, chloroquine (base, 0.25 gm. weekly) and camoquin® (4-[7-chloro-4-quinolylamine]-alpha-diethylamino-ortho-creosol) (base, 0.2 gm. weekly) proved superior to proguanil also known as chlorguanide (salt, 0.3 gm. weekly or 0.1 gm. bi-weekly). They afforded high protection and reduced splenomegaly, thereby improving the general health of the population and increasing the working capacity. In spite of the fact that the people were living in poor economic conditions without any other antimalarial measures, there was a marked reduction in the incidence of malaria, which varied according to the drugs used. Until antimosquito measures are possible, chemoprophylaxis should continue to have an important place in the suppression of malarial fever.

Canadian Journal of Public Health, Toronto

43:1-42 (Jan.) 1952. **Partial Index**

Antibiotics in Public Health. C. D. Farquharson.—p. 1.
Cancer of Breast: Invalid Evidence of Increase. N. E. McKinnon.—p. 10.
*Infectious Hepatitis in Army Installations in Kingston Area. R. D. Barron.—p. 25.

Infectious Hepatitis.—The Kingston area was the only area in Canada that reported an unusual prevalence of infectious hepatitis in 1949 and 1950. A total of 260 patients with infectious hepatitis were admitted to the Kingston Military Hospital from April 1, 1949, to March 31, 1950. Observations of these cases suggested that infectious hepatitis may be spread by both the respiratory and the gastrointestinal route. The incidence of clinical jaundice in infectious hepatitis may be much lower than is usually anticipated. The incubation period of infectious hepatitis can be as short as 10 to 14 days. Infectious hepatitis may be spread by water, should the water treatment system break down in an endemic area. In the presence of much organic matter boiling of drinking water appears to be a more effective method of controlling spread of this disease by water than chlorination.

Deutsche medizinische Wochenschrift, Stuttgart

77:385-412 (March 28) 1952. **Partial Index**

*Closure of Draining Bronchus as Independent or Supplementary Treatment in Cavitary Tuberculosis. R. Nissen and A. Lezius.—p. 385.
Clinical Experiences with Injections of Fresh Hypophyses of Calves. D. Müting.—p. 390.
Clinical and Experimental Study of New Sulfonamide Compound: Sulfisoxazole (Gantrisin®). W. Mauermayer.—p. 391.

Closure of Draining Bronchus in Treatment of Cavitary Tuberculosis.—In 16 patients with cavitary tuberculosis, the bronchus draining the lesion was closed surgically. This was accomplished by ligation with heavy umbilical tape in 4 patients, and by sectioning of the draining bronchus followed by suture of the distal and peripheral stumps in 12. Thoracoplasty with resection of the first five ribs was performed in the four patients who had ligation of the bronchus, and the first three or four ribs were resected in four of the 12 patients whose bronchi were sectioned. Pulmonary parenchyma and blood vessels were not injured in the course of closure of the bronchus. Ligation of the draining bronchus resulted in removal of fistulous and open cavities despite the fact that these patients had had pyopneumothorax after perforation of cavities two years previously and their poor general condition did not permit pleuropneumonectomy with subsequent thoracoplasty. The ligation technique proved inadequate for closure of the main stem bronchus. Recanalization or recurrence of cavities, however, were not observed, although in three patients the ligatures became detached within three to five months and were expectorated. Of the 12 patients subjected to sectioning of the draining bronchus, six had multiple cavities in one or two segments, with tuberculous changes in the contralateral lungs. Closure of the cavities was obtained in all six patients by collapse of the cavity, atelectasis, or filling in with granulation tissue. Intracavitary secretory surfaces were not observed after closure of the draining bronchus. The remaining six patients had isolated cavities in the upper lobe without demonstrable tuberculous involvement of the contralateral side. In three of them Monaldi's drainage had failed, and a fistulous cavity had resulted in one. The sputum of four patients became free of bacilli immediately after the intervention, and the sputum of one within 18 days. Six to eight weeks after the operation the cavities were no longer visible on roentgenograms. Healing was more rapid and more complete than in the first group, although additional thoracoplasty was purposely not carried out in four patients. The favorable effect of closure of the draining bronchus independent of thoracoplasty was thus demonstrated. Operative exposure of the draining bronchus requires exact topographic diagnosis of the segment in which the cavity is situated. This may be established by tomography, bronchography, and bronchoscopy. Additional thoracoplasty may be advisable if pleural induration prevents filling of the empty space as a result of compensatory emphysema of the healthy pulmonary segments, or if there are tuberculous secondary foci, but the additional thoracoplasty can be definitely less extensive than when it is performed initially for collapse of the lung. In the absence of late results, it is still too early for formulating definite indications for operative closure of the draining bronchus, but it seems to be most suitable for the treatment of isolated cavities in the upper lobe, particularly for collapse-resistant cavities after pneumothorax, thoracoplasty or cavernostomy, for multiple cavities in tuberculous-indurated areas of the lung, and for fistulous cavities.

Giornale Italiano di Anestesiologia, Turin

18:1-146 (Jan.-Feb.) 1952. **Partial Index**

Peripheral Anesthesia in Abdominal Surgery. G. D'Errico.—p. 1.
*New Cardiovascular Test: Methamphetamine Test. S. Occhipinti and F. Aschieri.—p. 87.
Strong Parasympatholytic Drug in Anesthesia: Methantheline (Banthine®). M. Seveso.—p. 104.

Methamphetamine Test of Cardiovascular System.—The study of the blood pressure curves that follow administration of methamphetamine to patients at complete muscular and mental rest may serve as a preoperative prognostic guide. Generally, 15 to 20 minutes after the drug is given, a typical blood pressure curve shows an increase in the systolic and diastolic pressure that reaches its maximum level after 30 to 45 minutes and is maintained for as long as one and one-half or two hours. After this, the blood pressure either returns slowly to its original level, or, after a slight fall, reaches again the previous maximum level, maintains it for almost that same length of time, and then falls to its initial level. Simultaneously, the pulse rate decreases (16 to 22 beats less per minute) or remains unchanged. This typical blood pressure curve indicates good condition of the heart and the circulatory system, and the prognosis is good if severe shock does not occur during the operation. Deviations in this typical blood pressure curve indicate circulatory insufficiency. If, after injection of methamphetamine, both the systolic and diastolic pressure fall or remain unchanged and the pulse rate increases, there is insufficiency of the peripheral circulation. An increase in diastolic pressure alone indicates poor condition of the myocardium. These data were obtained by the authors, who gave 0.02 gm. of methamphetamine intramuscularly to 32 surgical patients. The blood pressure curve was typical in 22 of them. As a therapeutic agent, methamphetamine is indicated in preoperative cardiovascular hypotonia, in primary or neurogenic shock, and combined with transfusion in severe shock. It should be given cautiously to patients with myocardial lesions, hypertension, and hyperthyroidism.

Lancet, London

1:521-574 (March 15) 1952

Interpretation of Statistical Trends in Tuberculosis. V. H. Springett.—p. 521.
Treatment of Maternal Obesity. J. S. Richardson.—p. 525.
Eye Changes Following Exposure to Metallic Mercury. S. Locket and I. A. Nazroo.—p. 528.
Splenic Venography: Demonstration of Portal Circulation with Diodone. B. Dreyer and O. E. Budtz-Olsen.—p. 530.
Preservation of Arterial Grafts by Freezing. C. A. Hufnagel and H. H. G. Eastcott.—p. 531.
Congenital Anomalies of Aortic Arch. E. G. Dolton and H. E. Jones.—p. 537.
Pulmonary Haemosiderosis. R. E. W. Fisher and R. Makin.—p. 540.
*Local Use of Chloramphenicol in Wound Infections. M. H. Flint, H. Gillies and D. A. C. Reid.—p. 541.
Plasma-Cystine Levels in Cystinuria. D. I. Fowler, H. Harris and F. L. Warren.—p. 544.

Local Use of Chloramphenicol in Wound Infection.—Flint and associates say that it is now unusual to find a strain of Staphylococcus aureus that is susceptible to either penicillin or streptomycin. These resistant organisms do respond to the local application of chloramphenicol, however, as do Pseudomonas pyocyanea, Streptococcus haemolyticus, Proteus vulgaris, and coliform bacilli. The authors treated 30 consecutive wound infections, including infected burns, gravitational ulcers, pedicle flaps, grafts, and abscess cavities, with chloramphenicol locally. Owing to the varied nature of the lesions, both dry and moist applications were used. In many of the cases a powder of 5% chloramphenicol in lactose was used, but where a moist application was more suitable, a solution of 5% chloramphenicol in propylene glycol was used. This solution was either used to irrigate the cavities or applied on wicks or gauze packs. The organisms in all but one of the cases were sensitive to 2.5% chloramphenicol. No organism became more resistant during or after treatment. Disappearance of bacteria in 30 cases was obtained in an average of four or five days; in many cases the time was shorter, especially in patients treated with chloramphenicol in propylene glycol, which seemed more effective than a powder. No infection failed to respond either clinically or bacteriologically to this local therapy, although 28 out of 30 patients had failed to respond appreciably to local treatment and/or systemic chemotherapy. After local application of chloramphenicol, many responded dramatically and all showed improved wound healing. No local or generalized allergic phenomena or deficiency of vitamin B complex developed. Local chloramphenicol in penicillin-insensitive wound infection is a useful adjunct to surgery.

Lyon Chirurgical

47:129-256 (Feb.-March) 1952. **Partial Index**

Nontraumatic Arterial Aneurysms of the Extremities. P. Wertheimer, J. Sautot and J. Chevalier.—p. 129.
Treatment of Hydatid Cysts of Kidney. L. Sabadini and J. Ducassou.—p. 139.
*Vagotomy in Treatment of Duodenal Ulcer. F. Lagrot and J. Greco.—p. 187.

Vagotomy for Duodenal Ulcer.—Vagotomy was performed in 111 patients with duodenal ulcer and 8 with postoperative peptic ulcer that occurred after gastroenterostomy in 5 and after gastrectomy in 3. Of the 119 patients, 37 were subjected to bilateral vagotomy alone, 48 to vagotomy combined with posterior gastroenterostomy, 15 to vagotomy plus Finney's pyloroplasty, and 19 to vagotomy plus partial gastrectomy. Of the total group, 12 died, 13 were lost to observation, 87 were followed for four months to three years, and 7 were followed for less than four months. Ten of the 12 deaths occurred in patients operated on for duodenal ulcer and 2 in patients operated on for postoperative peptic ulcer; only 3 deaths were attributable to the vagotomy. The immediate postoperative course was stormier among the patients subjected to vagotomy alone than in those in whom vagotomy was combined with partial gastrectomy. Ulcer pain disappeared immediately, but there was subumbilical swelling, diarrhea, and occasional vomiting, manifestations of the gastroduodenal stasis that had been induced by sectioning of the vagus nerve. Gastroenterostomy or pyloroplasty combined with vagotomy reduced the postoperative disturbances. Study of gastric acidity after insulin injection in 48 patients with duodenal ulcer, before and after vagotomy, corroborated the clinical observations. The gastric acidity was reduced less by simple bilateral vagotomy than by vagotomy combined with gastroenterostomy or pyloroplasty. Partial gastrectomy combined with vagotomy caused pronounced anacidity. Roentgenograms taken of 73 patients after vagotomy demonstrated disappearance of the ulcer niche, dilatation of the duodenum with stasis, and gastric atony, with the characteristic picture of dilatation of the stomach and delayed passage of barium. The follow-up of 87 patients showed that while only moderate results were obtained with simple bilateral vagotomy, which therefore should be abandoned in the future, results obtained with vagotomy combined with posterior gastroenterostomy or pyloroplasty were satisfactory in 85.10%, fair in 12.76%, and poor in 2.14% of the patients. Highly satisfactory results were obtained with vagotomy combined with partial gastrectomy. The authors conclude that vagotomy combined with gastroenterostomy or pyloroplasty yields results comparable to those obtained with gastrectomy, which is still valuable. Surgical treatment of duodenal ulcer should be determined by the physiological knowledge obtained from the tests of gastric secretion (histamine and insulin tests). Surgical treatment should consist of resection of the antropyloric region (for hyperacidity of hormonal origin) or of vagotomy combined with posterior gastroenterostomy or pyloroplasty (for hyperacidity due to the vagus nerve).

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

96:425-484 (Feb. 23) 1952. **Partial Index**

Favorable Results of Active Immunization Against Whooping Cough in a Rural Practice. M. B. M. Veenland and H. R. van der Molen.—p. 431.
Permanent Suction Drainage of Gastrointestinal Tract with Description of Semiautomatic Negative Pressure Apparatus. J. Leutscher.—p. 437.
*Intra-Arterial Transfusion. W. Steensma.—p. 446.

Intra-Arterial Transfusion.—Reports in the literature, particularly in American surgical publications, suggest that in certain conditions blood transfusions given through an artery are more effective than those given by the venous route. Steensma describes several cases in which he was able to corroborate this. Persons who are in deep shock are especially likely to derive more benefit from an intra-arterial than from an intravenous injection. Describing the apparatus which he used for intra-arterial transfusion, he stresses the need of a pressure pump.

Nordisk Medicin, Stockholm

47:201-230 (Feb. 15) 1952. **Partial Index**

*Antibiotic Treatment of Staphylococcic Bacteremia. P. Bastrup-Madsen and G. Nørby.—p. 201.
Controlled Hypotension to Reduce Bleeding in Operative Field. J. Stovner and S. Lindell.—p. 206.
Cancer Recurrence After Prostatectomy. G. Bakalim.—p. 209.
*Abdominal Aortography, Especially in Renal Diseases. R. Weyde. —p. 212.
Penicillin Treatment in Pemphigus Vulgaris. S. Hammarskjöld.—p. 221.

Use of Antibiotics in Staphylococcic Bacteremia.—The introduction of antibiotics has improved the prognosis in staphylococcic bacteremia. It is important to establish the bacteriological diagnosis before the start of treatment and to determine the resistance of the bacteria. Most strains of Staphylococcus aureus in Denmark respond to the antibiotics used, sensitivity to penicillin being most marked. The sensitivity of different strains to the various antibiotics may vary, and in rare cases there are strains resistant to penicillin. Sulfonamides seem to be ineffective. Eight cases of staphylococcic bacteremia are described. One patient given sulfonamide died. Of the seven patients treated with antibiotics, six recovered fairly rapidly and without complications; one patient died of ulcerative endocarditis. Massive doses of the antibiotic should be given in order that a sufficiently high concentration of the antibiotic be reached in the septic foci; 1,000,000 units of penicillin daily is advised for adults. In most cases the temperature did not become normal until about 10 days after the start of treatment. The authors urge continuation of antibiotic treatment for at least 10 additional days after the temperature level is normal. If the temperature remains high a long time, the possibility of a focus that requires surgical treatment should be considered, but surprisingly large septic foci disappear with antibiotic treatment.

Abdominal Aortography, Especially in Renal Diseases.—Weyde reports on 210 aortographic examinations performed in 200 patients, 155 of whom had renal disorders. One hundred of the examinations were carried out in the past year, a period during which 1,675 intravenous urograms were obtained. This indicates the frequency with which urographic examination is supplemented by aortography. The special field of aortography called renal angiography provides an important supplement to urography and pyelography in diagnosis of renal cysts and tumors, the establishment of atrophy of the renal parenchyma in hydronephrosis, and determination of the extent of destruction in specific and nonspecific disorders in the renal parenchyma. According to the author, abdominal aortography entails little danger, and is so simple that it can be used routinely, increasing diagnostic possibilities.

Revista Médica de Chile, Santiago

80:1-78 (Jan.) 1952. **Partial Index**

*Hemophilia and Hemophilic Syndromes. R. Honorato C.—p. 1.
Hemoglobin in Hematological and Hepatobiliary Affections. H. Ducci and A. Spoerer.—p. 11.
*Silicosis: Review of 717 Cases. J. Ansola, V. Labbe, V. Garcia and others.—p. 21.
Cortisone and Experimental Chagas' Disease. M. Agosin, R. Christen, A. Jarpa and others.—p. 34.

Hemophilia and Hemophilic Syndromes.—Disturbances in coagulation do not fully explain the picture in hemophilia. The frequency and seriousness of the hemophilic symptoms do not depend on the clotting time; patients in whom the clotting time was as much as two hours have been known to bleed less than others in whom it was only 14 minutes. Experiments have shown that two factors at least are involved in hemophilia; one, which is thromboplastinogenic, can be modified by treatment designed to stimulate the liver. Prothrombin consumption during coagulation, which is low in the hemophilic patient, tends to become normal under the influence of digitalis lanata, dehydrocholic acid, and methyl xanthines, although the clotting time is not changed. The sulfonamides, which do not affect prothrombin consumption during coagulation, often aggravate the symptoms of hemophilia by prolonging the clotting time. Normal blood calcium concentration is postulated to be an anticoagulant factor; a reduction in calcium concentration improves clotting in normal as well as hemophilic persons. The author lists four types of hemophilia: typical, acquired, latent, and dissociated. The patients treated with digitalis, dehydrocholic acid, and methyl xanthines were greatly benefited; hemorrhagic accidents decreased in number and severity, and hospitalizations were less frequent.

Silicosis.—Analysis of 717 cases of silicosis in Chile showed that most of them occurred among workers in the copper mines and in the quartz and glass industries. Objective symptoms are chiefly due to the two most frequent complications: pulmonary emphysema and chronic bronchitis. Pulmonary tuberculosis is the most serious complication; it occurred in an active form in 88, or 12.2%, of the cases, and was inactive in 29 others (4%). Chronic cor pulmonale was found in 22 cases (3%). The authors state that chronic silicosis sometimes progresses even after the hazardous employment has been discontinued; in 11.2% of 89 patients no longer exposed to dust, silicosis progressed without complications and in 7.8% tubercular complications developed. Silicosis is recognized as an occupational disease in Chile, and Chilean laws provide compensation for affected workers.

Revista Paulista de Medicina, São Paulo

40:1-78 (Jan.) 1952. **Partial Index**

*Metastasis of Hypernephroma to Thyroid Gland. Review of Literature and Presentation of New Case. N. Moraes Barros Filho and A. Dino de Almeida.—p. 1.
Inguinal Hernia in Children. V. Alves de Carvalho Pinto.—p. 19.
*Accidental Transmission of Chagas' Disease to Man by Blood Transfusion. J. L. Pedreira de Freitas, A. Biancalana and others.—p. 36.

Metastasis of Hypernephroma to Thyroid Gland.—Metastatic lesions of the thyroid are seldom recognized; when they are, tumor dissemination has usually progressed to such an extent that treatment can only be palliative. The authors present a case in which an unsuspected and nonsymptomatic hypernephroma of the right kidney, found at autopsy, produced a metastatic lesion superimposed on a small nodular goiter of long duration. This goiter began to increase rapidly in size three months before the patient was hospitalized, invading adjacent structures and causing progressive compression of the trachea and the esophagus. Primary thyroid malignancy was diagnosed, and a palliative operation decided upon. The tumor and adjacent structures were removed. The right carotid artery had to be dissected in its entire length; its walls were weakened and thinned by neoplastic invasion. Postoperative course was uneventful for four days, with complete relief of symptoms, but on the fifth day a sudden hemorrhage occurred, caused by rupture of the carotid artery, and this led to the patient's death within a few seconds. A review of the literature showed only 23 other cases of thyroid metastases originating in a hypernephroma.

Transmission of Chagas' Disease Through Blood Transfusion.—The possibility of infection with Chagas' disease through blood transfusion has lately been proved by serological and parasitological tests; research is now under way to determine the incidence of T. cruzi infection among donors to blood banks in São Paulo. Recipients who may have received blood from infected persons are being examined, and in vitro investigations are being carried out aimed at demonstrating the parasites in blood intended for transfusion and discovering methods of destroying them without making the blood unusable. Transmission of the parasites to one patient who had received blood from a donor with a chronic infection was proved by a positive xenodiagnosis, and in another by the complement fixation test and direct demonstration of T. cruzi in the blood. Incidence of the infection among prospective donors to two blood banks in São Paulo, where Chagas' disease is not autochthonous, was 2.2%. Complement fixation tests should be used to exclude infected persons as blood donors. Thimerosal (merthiolate®) is apparently effective against T. cruzi in solutions of 1:1,000, but further study is needed to establish this fact.

QUERIES AND MINOR NOTES

IRON-STAINED TEETH

To the Editor:—*1. What are the effects of iron stain on the teeth, especially in young children? To what extent does it promote dental decay? 2. What are the relative merits of sulfate, gluconate, citrate, and other salts of iron? 3. How can iron best be given to young children?*

W. F. Tanner, M.D., Young Harris, Ga.

Answer.—1. Iron stain, which is easily removed by routine dental prophylaxis, is a surface deposit and on the teeth of children has no deleterious effect other than giving them an unattractive appearance. As far as is known, iron stain does not promote or affect dental decay in any way.

2. Ferrous sulfate gives the most absorbable iron per weight of any iron salt, although gluconate or citrate may be less irritating.

3. Iron is best given orally as an elixir of ferrous sulfate or in solution flavored with citrate. Such iron medications should be given after meals and not with milk because of the precipitation of iron by the phosphates. It must be remembered that iron preparations are some of the most frequently prescribed drugs in the medical armamentarium. Recent communications reveal that acute iron poisoning is a reality and iron is not a completely innocuous drug when given in overdosage.

Reference is made to "Ferrous Sulfate Poisoning: Report of 3 Cases" by T. L. Duffy and A. M. Diehl (*J. Pediat.* **40**:1 [Jan.] 1952).

HEAD ROLLING IN CHILDREN

To the Editor:—*Is there any treatment to stop the nightly head rolling of a child, aged 7? This condition has been apparent almost since birth. She is a fraternal twin, in otherwise perfect physical and mental condition, and has never had rickets or any other serious illness, just the usual childhood diseases.*

M.D. Virginia.

Answer.—If the nightly head rolling of this 7-year-old child occurs while she is asleep it could be designated as a sleep disturbance, in the same category as nightmares, night-terrors, talking in the sleep, and grinding of the teeth while asleep. If it occurs before sleep it is a habit or conditioned reflex, which must be handled as any other similar condition. A mental hygienist might be consulted concerning this habit. No specific treatment seems indicated.

TREATMENT OF BURSITIS

To the Editor:—*What is the present status of deep roentgen therapy for the treatment of acute or chronic subacromial bursitis? Are there any contraindications? How many times can a person be given this type of therapy safely? How does it compare with other forms of therapy?*

George E. Quinn, M.D., Farmington, N. H.

Answer.—Acute and chronic subacromial bursitis are two entirely different problems from the standpoint of therapy. The patient with typical acute subacromial or subdeltoid bursitis has severe pain that prevents use of the extremity and disturbs rest. It is the consensus of orthopedic opinion that deep roentgen therapy for this condition is of definite and sometimes dramatic value. Roentgen therapy is usually given in three or four divided doses of 150 to 200 r units each, with the treatments given on successive days. When roentgen therapy is used alone, adequate sedation, rest of the extremity, and the use of ice bags are advised. For the patient in acute distress, it is often advisable to aspirate the distended bursa with multiple punctures, using a large gage needle, with procaine (novocain®) hydrochloride as a local anesthetic. Needling can be followed by roentgen therapy.

Patients with chronic subacromial or subdeltoid bursitis usually do not respond to roentgen therapy, as fibrosis or even calcification has occurred. Roentgen therapy, combined with intensive physical therapy, sedation, and sometimes, repeated procaine hydrochloride injections and needling, may be used for this type of patient. Recovery is usually slow. It is not considered advisable to give a patient more than two courses of roentgen therapy for subdeltoid or subacromial bursitis. If improvement is not obtained in a reasonable period of time, surgical excision of the bursa and exploration of the musculotendinous cuff is recommended.

CARE OF MICROCEPHALIC CHILD

To the Editor:—*A serviceman has a 16-month-old microcephalic daughter. The baby's condition is such that she requires almost constant attention. Please advise if there are institutions, either state or private, specializing in this type of patient and state your recommendations as to the best solution for this airman, since his finances are limited.*

Robert E. Lee, M.D., Gulfport, Miss.

Answer.—Microcephaly indicates an abnormally small brain within a skull of diminished size caused by failure in development. True microcephaly must be differentiated from the false variety, in which the diminished size of the brain is caused by a primary defect or a secondary cause. An example of the latter is radiogenic microcephaly caused by radiation of the maternal pelvis prior to the fifth month of gestation, when the immature nervous system is susceptible to the effects of roentgen rays. The fontanelles and sutures close prematurely because of the failure of continued normal growth of the brain. Various degrees of mental deficiency are always present, ranging from high-grade feeble-mindedness to severe amentia. Nothing can be done to improve the mental capacity of these persons; thus, institutionalization is indicated for life. Every state has facilities for these unfortunates. Inquiries should be directed to the state hospital nearest the patient. In this case, write to the Mississippi State Hospital, Whitfield, Miss., where the charge would be minimal. Private institutions, of which there are many, probably would be too expensive for this serviceman.

NIGHT CRAMPS IN LEGS

To the Editor:—*A woman, aged 69, who is otherwise in good health, has, at intervals, painful spasms of the calf muscles or of the muscles in the area above the Achilles tendon. These are associated objectively with a hardening of the muscles in the painful area. Massage or hot baths seem to hasten the termination of spasms. Attacks usually occur when she is asleep and wake her. She is on a normal diet, supplemented by B complex vitamins.* *M.D., New York.*

Answer.—Painful spasms in the calf muscles occurring during the night in a 69-year-old woman are characteristic of so-called night cramps. The cause of these is not well understood, but they seldom indicate poor arterial circulation or phlebitis. They often respond to quinine sulfate therapy; the recommended dose is 0.32 to 0.65 gm. (5 to 10 grains) taken two or three hours before retiring. Diphenhydramine (benadryl®) hydrochloride may be used in place of quinine sulfate, in a dose of 50 mg. taken an hour or two before retiring.

CALCIFICATION IN AORTIC ARCH

To the Editor:—*Please give an opinion as to whether roentgenographically visible calcification in the aortic arch, with or without aneurysm, is due to vascular syphilis, arteriosclerosis, or both and to what degree.*

C. D. J. Generales, M.D., New York.

Answer.—Calcifications in the aortic arch are usually due to arteriosclerosis and very rarely to syphilis.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

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ARE FUNGUS INFECTIONS INCREASING AS A RESULT OF ANTIBIOTIC THERAPY?

Albert M. Kligman, M.D., Ph.D., Philadelphia

An increasing incidence of moniliasis in association with the administration of the wide-spectrum antibiotics, such as aureomycin, terramycin, and chloramphenicol (chloromycetin®), has been recorded recently.[1] For inclusion in New and Nonofficial Remedies, the Council on Pharmacy and Chemistry of the American Medical Association requires that these drugs bear a label warning the user that prolonged administration may lead to moniliasis.[2] While cutaneous and other reactions occur with some frequency after antibiotic therapy, it is believed that incrimination of moniliasis as the cause of numerous side-reactions requires critical reappraisal. Our studies indicate that: 1. Most of the reported instances of localized moniliasis are not actually cases of this disease. 2. The definitive requirements for establishing this diagnosis are often insufficiently appreciated. 3. Infection with fungi after antibiotic therapy is a complex phenomenon that is part of the general problem of superinfection with antibiotic resistant micro-organisms, including both fungi and bacteria.

SIDE-REACTIONS TO THE WIDE-SPECTRUM ANTIBIOTICS

The newer wide-spectrum antibiotics are apparently more troublesome than penicillin as a cause of undesirable side-reactions.[3] The majority of unfavorable reactions result from mucous membrane irritation. The signs and symptoms include sore mouth and throat, stomatitis, glossitis, black hairy tongue, perlèche, diarrhea, anal and vulvar pruritus, and genitocrural lesions. The mouth is oftenest involved. Whereas some of these reactions may be associated with moniliasis, they may also be expressions of various diseases, such as vitamin deficiency states, allergic reactions, bacterial and viral infections, and primary irritation. Evidently the thesis that these side-reactions are expressions of moniliasis and not of other diseases with similar features rests largely on the readiness with which Candida (Monilia) albicans may be isolated from persons showing these reactions. This evidence is not sufficient. The isolation of the organism is in itself not always diagnostically compelling. C. albicans is an endogenous organism that occurs in many persons as part of the normal respiratory and gastrointestinal flora.[4] Ordinarily this species makes up a small part of the normally present flora, which is predominantly bacterial; however, C. albicans is recoverable in large quantities in the mouths and feces of persons receiving the orally administered wide-spectrum antibiotics.[5] The isolation of this organism in striking quantities is a prominent finding in the great majority of those persons ingesting these antibiotics, whether there are symptoms or reactions of any kind. This is especially true of the oral flora when antibiotic troches are allowed to dissolve in the mouth, rather than when capsules of the drug are swallowed. The overwhelming majority of such persons do not have moniliasis.

The emergence of large numbers of C. albicans in the mouths of persons treated with antibiotics is readily explained. Wide-spectrum antibiotics do not actually sterilize the mouth or gastrointestinal tract; on the contrary, although they bring about a rapid suppression of susceptible organisms, this is followed by a gradual regrowth of antibiotic resistant organisms. The original flora is replaced; in short, a new population or community of micro-organisms arises that may be thought of as the new, temporarily resident flora as determined by the biologically selective action of the antibiotic. In the

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From the Department of Dermatology and Syphilology (Donald M. Pillsbury, M.D., Director), University of Pennsylvania School of Medicine.

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[5] Lipnik, M. J.; Kligman, A. M., and Strauss, R.: Antibiotics and Fungous Infections, J. Invest. Dermat. **18**: 247, 1952.

mouth there tends to be a conversion of a predominantly gram-positive, antibiotic susceptible, bacterial flora to a predominantly gram-negative, antibiotic resistant flora in which, in addition to bacteria, C. albicans may be a prominent member.

In view of these considerations, the diagnosis of moniliasis in a person with some unfavorable reaction, such as glossitis and stomatitis, obviously requires more than a mere demonstration of the organism. Even the direct visualization of this organism in smears taken from the mouths of persons receiving these antibiotics is not decisively diagnostic. Recent studies at the University Hospital, particularly with troches, indicate that this organism may often be observed, sometimes abundantly, in direct smears from the mouths of persons who show no demonstrable side-effect or evidence of untoward reaction to the antibiotic. Since persons without detectable irritative reactions may harbor large quantities of C. albicans in their mouths (as demonstrated by smears and cultures) without actually having moniliasis, the problem of recognizing true moniliasis becomes very complicated. The diagnostic issue thus becomes a matter both of defining moniliasis as a disease and of laying down criteria for its definitive diagnosis. This is not always easy. It should be emphasized that caution is to be exercised when entertaining this diagnosis on the basis of the usual laboratory and clinical data.

Undoubtedly thrush, a form of localized mucous membrane moniliasis, is the commonest expression of this disease. Since it occurs in the mouth just like the commonest reactions to antibiotic therapy, it is necessary to consider whether thrush has distinctive features that would distinguish it from inflammatory reactions occurring after antibiotic therapy. In its classical form thrush is sufficiently characteristic to be differentiated from other conditions that it might superficially resemble. The typical lesion of thrush is a whitish film or plaque, which is curdy or membranous. This film is easily detached from the underlying, reddened mucous membrane. Microscopic examination of this cheesy film shows an enormous aggregation of budding cells and filaments. The plaques, in fact, represent large colonies of the fungus in almost pure form, comparable to its growth in a test tube. As mentioned previously, the mere finding of budding cells and filaments in direct smears of the mouth cannot be considered diagnostic, since these may be found in perfectly normal persons who have received antibiotics. Demonstration of a solid mass of budding cells and filaments within a grossly detachable plaque, however, is a finding of strong diagnostic cogency. Culture of the organism serves to confirm the diagnosis but is in itself not diagnostically meaningful. Perhaps there are subclinical cases of thrush in which the characteristic film does not appear, but, if such borderline cases of pathogenicity occur, present knowledge scarcely permits us to identify them as true moniliasis. The side-reactions that have been identified as moniliasis would fall in this category if the proponents of this view are to support their thesis. In our experience classical thrush is uncommon following antibiotic therapy.

It has been claimed recently that the recovery of C. albicans after antibiotic therapy may be appreciably diminished when antifungal agents, such as the mixed esters of parahydroxybenzoic acid, are incorporated in the capsules.[6] The clinical value of this "prophylactic" measure awaits evaluation. Incidentally, McVay and Sprunt believe that persons from whom C. albicans is recoverable have moniliasis. This furnishes an example of the widespread misunderstanding of the diagnostic significance of isolating this organism. The topical application of antibiotic ointments has also complicated the diagnosis of glabrous skin moniliasis. Ordinarily C. albicans is not part of the resident skin flora; for, unlike other transient but potentially pathogenic organisms of the normal skin, such as coagulase-positive strains of Staphylococcus aureus, it shows little tendency to become secondarily established on skin damaged by a variety of primary diseases, such as contact dermatitis or seborrheic dermatitis.[7] Therefore, its isolation in lesions not treated by topical antibiotics has a greater diagnostic significance than its isolation from the mouth. The diagnosis of cutaneous moniliasis is further supported by the more or less characteristic red, weeping, sharply circumscribed lesions that are typical of the disease. Thus, the demonstration of budding cells and filaments in direct smears of clinically characteristic cutaneous lesions from which C. albicans can be recovered by culture constitutes almost definitive evidence of moniliasis. The reliability of these diagnostic criteria, however, are threatened by our current studies, which show that C. albicans may become established in dermatitic skin to which wide-spectrum antibiotic ointments have been topically applied. This seems to occur chiefly when the antibiotic ointment is applied to chronic lesions, regardless of cause, for a prolonged period of time (a week or more). In our experience, lesions that heal rapidly fail to become invaded by C. albicans. Livingood has noted this phenomenon in chronic lesions treated with neomycin ointment.[8] He considered the possibility that the presence of C. albicans in chronic lesions may adversely affect the healing process. I have not, and presumably Livingood has not, observed the development of classical cutaneous moniliasis, with the features mentioned above, following the application of antibiotic ointments. The actual harmfulness of C. albicans in lesions of chronic dermatitis awaits demonstration. We have, in fact, on a few occasions observed the gradual healing following antibiotic treatment of stasis ulcers containing large numbers of C. albicans organisms. Incidentally, in my experience the application of antibiotic ointments to normal skin has not significantly altered the composition of the resident flora. C. albicans could not be recovered in normal skin treated in this way.

The diagnosis of moniliasis in tissues that are not accessible for direct inspection, such as the lungs, presents special and almost insurmountable difficulties. Obviously, isolation of the organism is not conclusive, particularly if the patient has received antibiotics. Indeed, it is believed that short of the impractical procedure of a biopsy of the lung, it is almost impossible to offer indisputable criteria for establishing the diagnosis of bronchopulmonary moniliasis. Unfortunately, skin tests and serologic reactions do not have a decisive status. In fact, the skin test is almost worthless, and many normal persons have anti-Candida agglutinins in their serums.[9] Further complications arise because of the frequency with which C. albicans establishes itself in pathological tissue as a secondary invader. The cases of nonfatal bronchopulmonary moniliasis recorded in the old and recent literature almost uniformly reveal a lack of appreciation of the diagnostic complexities. In my estimation, proof of the disease has usually been inadequate, and there is a serious doubt whether many of these cases actually were moniliasis. In reviewing the literature, one is impressed with the willingness of clinicians to place a strong reliance on the isolation of the organism, particularly if there were roentgenologically demonstrable lesions in a patient with respiratory symptoms. A critical review of these cases suggests that in most of them the primary cause of the pulmonary disease could not be established and that in the absence of a definitive diagnosis the observers seized on the isolation of C. albicans as a resolution to the diagnostic puzzle. Indeed, exclusion of a primary disease such as tuberculosis and neoplasm is a cardinal requirement before entertaining a diagnosis of pulmonary moniliasis. This negative approach to diagnosis is simply indicative of the inadequacy of our present methods. Of course, one can never be sure that primary disease has actually been excluded rather than simply missed.

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[7] Marwin, R. M.: Relative Incidence of Candida Albicans on the Skins of Persons with and Without Skin Diseases, J. Invest. Dermat. 12: 229, 1949.

[8] Livingood, C. S., and others: Pyogenic Infections Treated with Neomycin, J. A. M. A. 148: 334 (Feb. 2) 1952.

A favorable symptomatic response to iodide therapy does not constitute a therapeutic test for moniliasis as assumed by some authors. The therapeutic effect of potassium iodide, if any, is quite uncertain. Thus, Oblath and co-workers evidently assumed that a favorable response to iodide therapy supported the diagnosis of pulmonary moniliasis.[10] Moreover, since the work of these latter authors is very recent, it affords an example of the foregoing remarks dealing with the disputable character of the cases reported as pulmonary moniliasis. There is a reasonable doubt that even one of their six patients with "pulmonary moniliasis" actually had this disease in a primary form. In the one case in which they were able to do an autopsy, they expressed some consternation over their difficulty in finding organisms in histological sections of the viscera. Gastrointestinal moniliasis also is a poorly defined disease of questionable status. It is undoubtedly uncommon. The diagnosis of rectal or anal moniliasis is obviously not justified simply on the basis of the isolation of C. albicans in a patient with gastrointestinal signs and symptoms, such as diarrhea and anal fissures. The problem of diagnosis is more complicated than most clinicians appear to realize. Critical work in this area is greatly needed.

STIMULATION OF GROWTH OF CANDIDA ALBICANS BY ANTIBIOTICS IN VITRO

Several investigators have reported an enhancing effect of aureomycin on the in vitro growth of C. albicans.[11] This direct stimulation of the fungus has been offered as a possible explanation for the supposedly increased incidence of moniliasis after antibiotic therapy. Pappenfort and Schnall showed that the material taken from a 250 mg. capsule of aureomycin stimulated the growth of C. albicans in vitro.[1b] This effect was subsequently shown to be due to an inert carrier in the capsule (the phosphate ion present in a phosphate salt of calcium).[5] Moore's estimation of the stimulatory effect of aureomycin was purely qualitative. Quantitative studies have failed to show that aureomycin, chloramphenicol, terramycin, and penicillin enhanced the growth of C. albicans.[5] Even though Campbell and Saslaw believed that they demonstrated a growth stimulating effect of streptomycin on a number of pathogenic fungi, they were unable to show any enhancement in experimentally infected animals treated with streptomycin.[12] There is, in short, no convincing evidence that antibiotics directly stimulate the growth of fungi.

Effect of Antibiotic Therapy on Experimentally Infected Animals.—The intravenous inoculation of C. albicans into mice regularly causes death within 10 days as a consequence of renal involvement.[13] Intraperitoneal inoculation produces a more chronic and generally mild disease with a death rate of about 10%. An experimental means is thus afforded of evaluating the effects of antibiotics on acute and chronic moniliasis in mice. To date, fairly extensive researches in our laboratories have failed to show that antibiotics adversely influence the course of experimental moniliasis in mice. This is also true of the disease in rabbits and in chick embryos. We have been unable to confirm the work of Foley and Winter, who consider that penicillin therapy potentiated the infection of rabbits and chick embryos inoculated with C. albicans var. stellatoidea.[14] Indeed, our studies fail to reveal that any of the commonly used antibiotics have an adverse influence on the course of experimental blastomycosis, histoplasmosis, coccidioidomycosis, and sporotrichosis in mice. This was true when the drugs were given orally as well as when they were given by repeated intraperitoneal injection. These results will be published in detail later.

GENERALIZED VISCERAL MONILIASIS

A small number of well-authenticated cases of generalized fatal moniliasis (exclusive of generalized cutaneous moniliasis) have been recorded in which the authors stress the possible etiological role played by prolonged antibiotic therapy.[15] Such cases have evidently become commoner since the advent of the antibiotic era. Unlike the relatively benign side-reactions already described above, this is a disastrous complication. The role played by antibiotic therapy in inducing systemic moniliasis requires serious analysis. The meager clinical data so far available make such an estimation difficult because of the circumstances associated with the few reported cases. For instance, of seven patients with generalized moniliasis observed by Farber (see Zimmerman's paper [15b]), five had leukemia. It is true that these persons had moniliasis toward the end of their disease, and this was evidently the final cause of death. Leukemia itself, however, is a fatal disease. Whereas bacterial infection was often the terminal event in the lives of leukemic patients in the past, this complication can now be largely prevented by antibiotic therapy; moreover, antileukemic drugs prolong the lives of these patients without curing the disease. Obviously, leukemic patients do not have normal resistance to infection or to any kind of stress. The opportunity for terminal moniliasis to develop in these patients is enhanced by antibiotic therapy because of the emergence of an abundant monilial flora in the oropharnyx.

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The existence of a large quantity of potentially pathogenic organisms in a very ill person predisposes to infection. These opportunistic fungi, which ordinarily have a low degree of virulence, may find conditions favorable for invasion when the host defenses are depressed by such factors as serious disease, malnutrition, surgical trauma, or old age. The occurrence in dope addicts of mycotic endocarditis due to C. parakrusei is a reflection of this same phenomenon.[16] The latter organism, normally a resident saprophyte, has a low pathogenicity limited to hosts rendered susceptible by unusual circumstances. Mucormycosis of the central nervous system, in patients with diabetic acidosis, is another illustration of the same phenomenon.[17] In the latter cases a common saprophytic laboratory contaminant is the offender. It is proper to regard fungi, as a whole, as being adventitious or incidental parasites of man. Fungi only rarely have the invasive capacity for serious damage. Disseminated fungus infections are thus uncommon; however, they are increasingly being recognized in association with other primary diseases, such as lymphoma. The principle here is that disease is a complex reaction of the host in which a number of causal factors may participate. A comprehension of disease cannot thus be afforded by identification of only one of the factors in the causal network. This is the key to understanding the nature of mycotic disease.

OTHER FUNGUS INFECTIONS COMPLICATING ANTIBIOTIC THERAPY

The ordinary laboratory weed molds, such as species of Aspergillus, are rare causes of human disease, although they are important parasites of fowl. Great caution is to be exercised in these days of enthusiastic antibiotic treatment in attributing such infections to antibiotic therapy. Zimmerman cautiously implicates penicillin therapy as the possible etiological agent in Aspergillus endocarditis in two patients.[15b] Again the real part played by the antibiotic is difficult to assess, but of great significance is the fact that one of these patients had rheumatic fever, the other a severe accident requiring amputation of a leg. Thus, primary conditions were present that could have predisposed to mycotic infection even without the antibiotic therapy. We have directly visualized Aspergillus fruiting bodies in the bowel mucosa of two patients who came to autopsy and who had received succinylsulfathiazole (sulfasuxidine®) and streptomycin by mouth for long periods of time. Both patients had primary diseases of an unknown nature in which there was severe bowel involvement. In view of the chronic diarrhea these patients had and the debility that resulted from it, antibiotic therapy probably predisposed to terminal infection with some species of Aspergillus. Still, it is to be emphasized that aspergillosis was a secondary event superimposed on a debilitating disease and not simply a consequence of a change in the bowel flora. It is in this sense that antibiotic therapy may be thought of as an indirect cause of a mycosis.

GENERAL PROBLEM OF DISEASE DUE TO ANTIBIOTIC RESISTANT ORGANISMS

Antibiotic therapy has made it increasingly rare for patients with lethal diseases to die of a terminal bacterial infection. One may anticipate that in some instances fungi will take over the role formerly played by the bacteria in bringing about death. Perhaps it will eventually be desirable to incorporate antifungal agents in antibiotics in order to prevent terminal or incidental mycotic infections.

It has now become common practice to administer a battery of antibiotics to persons hospitalized for many different reasons. Patients with an ill-defined chronic disease are almost always treated with antibiotics. Disseminated fungus infections are basically chronic diseases that may begin with vague symptoms and remain undiagnosed for months after onset. It is easy to see that in some cases, after the diagnosis becomes apparent, mycotic infections will be attributed to the antibiotic therapy. In such instances the antibiotic therapy will be simply an associated phenomenon and not a causal one. Unless one approaches this issue with caution, it will be easy to blame a wide array of clinical misfortunes on antibiotic therapy.

Has moniliasis actually increased as a result of antibiotic therapy? Perhaps it has. I believe we are probably seeing more cases of true thrush than formerly, particularly in debilitated, aged persons. This probably is simply an expression of the opportunistic pathogenicity of C. albicans. Considering the extraordinarily common use of antibiotics, however, even this localized type of infection is fairly uncommon in our experience. Our observation of a large number of patients experimentally receiving aureomycin troches (50 mg., six times daily for a week) fails to support the notion that true oral moniliasis is a common event, even though many of these persons were aged and in poor health. In the past two years we have had occasion to see a number of patients whose pulmonary disease was diagnosed as moniliasis and who were considered to have acquired this disease as a result of antibiotic therapy. These patients had clear-cut lung lesions as demonstrated by roentgenogram, and respiratory symptoms such as cough and dyspnea. There were large quantities of C. albicans in the sputum. In no instance could the diagnosis really be verified. One patient was eventually shown to have sarcoidosis, and in another tuberculosis was finally proved. The diagnosis remained undisclosed in the others, some of whom recovered. This experience emphasizes the difficulties involved and warns against accepting this diagnosis just because everything else has been "ruled out." In this connection the caution exhibited by Gausewitz and co-workers in attributing a case of generalized moniliasis to antibiotic therapy is praiseworthy.[15a] A 10-year-old patient was admitted to the hospital with a severe hypoplastic anemia, and fungus cultures were initially negative. The authors consider that antibiotic therapy may have contributed to the eventual development of systemic moniliasis but indicate uncertainty as to the actual causal relationship; at any rate, this case would appear to be a terminal infection superimposed on a serious primary disease of unknown origin.

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[16] Wikler, A., and others: Mycotic Endocarditis: Report of a Case, J. A. M. A. **119**: 333 (May 23) 1942.

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Actually the problem of microbial infection complicating chemotherapeutic therapy is not a new one and does not uniquely involve pathogenic fungi. The problem relates to the general issue of the role played by antibiotic resistant organisms, whether fungal or bacterial, in producing superinfection. Sommer and Favour, for instance, described four persons with recurrent respiratory disease or with surgical complications in whom the administration of penicillin, after a temporary benefit, led to the development of bronchopneumonia due to penicillin resistant gram-negative organisms.[19] The latter organisms (Escherichia coli, Proteus, and Pseudomonas) were simply a part of the emergent resistant flora that regularly results from penicillin therapy. Here, too, the new flora produced a new disease, not because the resistant organisms were particularly virulent but because these patients were chronically ill and had very low resistance. The possibility of bacterial superinfections following penicillin therapy in persons in poor health is real enough, and a number of cases are on record.[20] This is obviously a rare event and cannot be regarded seriously as a hazard of penicillin therapy. Probably superinfection with bacteria often goes undetected.

Finland notes that penicillin resistant staphylococci are being increasingly isolated.[21] Moreover, he has observed an increasing number of staphylococcic infections at the Boston City Hospital. Evidently, many strains of staphylococci are becoming resistant to antibiotics. Antibiotic therapy is thus creating a new biologic problem, that of antibiotic resistance. The speed with which certain organisms become resistant to the sulfonamides is well known. Actually, the subject of the present report is related to the larger problem of microbial resistance.

COMMENT

Antibiotic therapy does not bring about sterilization of areas normally inhabited by micro-organisms. After a variable period of time, resistant organisms establish a new flora. Such organisms may originate in different ways: 1. They may represent bacteria or fungi that were initially present in small numbers, being held in check by the competition of more dominant organisms. (This is probably the chief source of C. albicans following antibiotic therapy.) 2. They may arise from an outside contactant source. 3. Originally susceptible organisms may acquire resistance by biologic adaptation and variation. The fungi cannot be included under this latter group, since they are intrinsically resistant to the presently used antibiotics. The development of a resistant or nonsusceptible flora is a regular and expected consequence of antibiotic therapy, whether this flora is composed of fungi and bacteria that are naturally resistant and that become dominant simply because of the elimination of competing organisms or whether originally susceptible organisms acquire resistance after being in prolonged contact with the antibiotic. In the overwhelming majority of cases the elimination of susceptible organisms and their replacement by nonsusceptible ones has no real clinical significance. In some cases, particularly when the host's defenses are depleted by primary disease, the intrinsically resistant flora, ordinarily composed of organisms of relatively low virulence, acquires pathogenicity. This is an infrequent and usually not too serious event with the fungi (C. albicans) and the resident, gram-negative bacteria (E. coli, Pseudomonas, Proteus, etc.). The problem of antibiotic resistance, however, acquires a greater significance in respect to those organisms that are not intrinsically resistant, such as coagulase-positive staphylococci and hemolytic streptococci. The latter organisms are potentially highly virulent, and the increasing incidence of resistant strains has serious clinical implications. This problem, in my opinion, is likely to be of far greater significance than the problem of superinfection with fungi.

SUMMARY

Candida albicans regularly emerges in abundance in the mouths and gastrointestinal tracts of those receiving wide-spectrum antibiotics. The isolation of this organism in the presence of some untoward side-reaction, such as glossitis or stomatitis, is not tantamount to a diagnosis of moniliasis. Evidence is presented that the stigmatization of the mucous membrane reactions observed in association with antibiotic therapy as moniliasis is probably unfounded. The diagnostic complexities of recognizing pulmonary moniliasis are described.

The wide-spectrum antibiotics were not found to enhance the growth of C. albicans in vitro nor to potentiate mycotic disease in animals with experimental moniliasis, blastomycosis, histoplasmosis, coccidioidomycosis, and sporotrichosis. The problem of superinfection with fungi is discussed in relation to the general problem of microbial resistance to antibiotics.

3400 Spruce St.

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[18] Deleted in proof.

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ACUTE ULCERS OF UPPER GASTROINTESTINAL TRACT

THEIR RELATION TO SYSTEMIC STRESS AND ADRENAL DAMAGE

Edward E. Woldman, M.D., Cleveland

An acute ulcer of a nonspecific type is the initial lesion in the development of a chronic peptic ulcer. This fact has been presumptively established by experimental evidence from the laboratory and descriptive evidence obtained during surgical procedures and necropsy.[1] However, few investigators have directed their attention toward acute ulcers of the upper gastrointestinal tract, while the literature on chronic ulcers is abundant.

It is very difficult to gather evidence of acute ulcers, because they heal very rapidly, and the majority heal without leaving a trace. Acute ulcers are difficult to demonstrate by radiography, and are seen only when the stomach is inspected by the gastroscope, at operation, or at necropsy. Selye [2] reports that acute gastrointestinal ulcers have formed during the alarm reaction following systemic stress. He has shown that various stresses that affect large portions of the body, such as trauma, surgery, burns, infections, fatigue, or emotional tension, will produce an alarm reaction.

Several observers have reported acute ulcerations of the esophagus, stomach, and duodenum after surgical operations. The first case of postoperative duodenal ulceration was reported by Billroth [3] in 1867. Penner and Bernheim [4] reported in detail four cases of ulcerative lesions in the esophagus, stomach, and duodenum followsurgical operations. Cushing [5] reported peptic ulcer in the stomach with perforation in a few cases following brain operations.

The occurrence of acute erosions and ulceration in the stomach and duodenum has been noted repeatedly in consequence of severe cutaneous burns. This was first reported by Curling [6] in 1842. Vinson [7] has noted that external trauma may be a cause of acute lesions of the esophagus, and reported four cases of this type, but did not offer any explanation as to how these lesions were brought about. Acute ulcers in the gastrointestinal tract have been observed in the newborn in association with birth trauma.

In attempting to produce gastrointestinal lesions in experimental animals, Selye [8] found that ulcers were more readily produced following adrenalectomy. He states that erosions are especially easily produced after the adrenal glands have been removed, while adrenalectomy in itself does not cause gastric erosions to develop in the rat.

There is ample evidence in the literature that damage to the adrenal glands is accompanied by a high incidence of ulcerative lesions of the esophagus, stomach, and duodenum. In 1916 Mann [9] showed that lesions developed in the stomach and duodenum in approximately 90% of animals that died of adrenal insufficiency as the result of removal of both glands. In one animal examined within 10 hours after adrenalectomy, he found several focal hemorrhagic areas that he believed were possibly the beginning of ulcers. In another animal that died 22 hours after removal of the glands, well-formed ulcers were present in the digestive tract. McLaughlin [10] found that when the adrenals were not removed but were merely damaged by a high frequency coagulating current, 17 of 21 animals had definite ulceration of the digestive mucosa.

Selye [11] has shown that these gastrointestinal ulcers occur during the shock phase of the general adaptation syndrome. However, these lesions are seldom found in clinical cases, because the gastrointestinal tract is rarely inspected during or soon after the shock phase. The terminal stage of many illnesses or severe injuries may occur during the shock phase, and therefore necropsy findings should show ulceration of the gastrointestinal tract as well as some evidence of adrenal damage. This study was undertaken with this point in view.

MATERIAL

Cases studied were from the postmortem files of the division of pathology of St. Luke's Hospital. This study concerns the incidence of acute ulcers in the esophagus, stomach, and duodenum in 1,000 consecutive necropsies performed by Dr. R. Domingues, director of the department of pathology, St. Luke's Hospital. He personally examined the pathological material and made a special effort to find these lesions. Since an acute ulcer may begin as a focal mucosal hemorrhage and then be converted to a hemorrhagic erosion and then to an acute ulcer, we therefore included all these lesions in our report. Each ulcer was examined microscopically for cellular infiltration around the base in order to determine whether the lesion had developed ante mortem or post mortem. Postmortem lesions were not included. Of this total number of necropsies, 57 were not considered in this report because of a restricted autopsy in which the gastrointestinal tract was not examined, or stillbirth. Thus there were 943 cases in which detailed study was made.

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ANALYSIS OF RECORDS

The focus of interest in this investigation was benign lesions of the upper gastrointestinal tract, that is, in the esophagus, stomach, and duodenum. These consisted of focal mucosal hemorrhages, hemorrhagic erosions, acute ulcerations, and chronic ulcers that were incidental findings. That these lesions occurred before death and were not the result of postmortem changes was shown by microscopic study. Acute ulcers and focal mucosal hemorrhages were also found in the jejunum, ileum, and colon, but are not discussed in this report.

The microscopic changes in the adrenal glands were studied and recorded as (1) slight or moderate congestion or round cell infiltration, (2) marked congestion or marked round cell infiltration, and (3) severe destruction of the adrenal gland, such as hemorrhages, necrosis, thrombosis, tuberculosis, atrophy and fibrosis, leukemic infiltration, and tumor metastasis to the adrenal gland. The terminal pathological condition of each case was recorded.

TABLE 1.—*Location and Type of Lesion in the Upper Gastrointestinal Tract*

Type of Lesion	Location of Lesion		
	Esophagus	Stomach	Duodenum
Mucosal Hemorrhage			
Single	0	0	0
Multiple	10	96	25
Total	10	96	25
Hemorrhagic Erosion			
Single	0	2	0
Multiple	0	20	0
Total	0	22	0
Acute Ulcer			
Single	8	15	11
Multiple	34	26	10
Total	42	41	21
Chronic Ulcer			
Single	1	5	14
Multiple	0	1	10
Total	1	6	24

RESULTS

Location and Type of Lesion.—In our series of 943 cases mucosal hemorrhages were found in 131 cases, hemorrhagic erosions in 22 cases, acute ulcers in 104 cases, and chronic ulcers in 31 cases. The chronic ulcers were incidental findings in these cases, and were not diagnosed clinically. In addition, there were 16 cases of chronic peptic ulcer in which this was the primary cause of death, either by perforation or hemorrhage. These cases were excluded from consideration in this study.

Table 1 shows the number of cases of each type of lesion and the location of each lesion. In some instances more than one type of lesion existed in the same cadaver, and in other instances the same type of lesion existed in more than one location. This made the totals in table 1 different from the totals in the other tables.

It will be noted that in 42 cases there were acute ulcers in the esophagus, in 41 acute ulcers in the stomach, and in 21 acute ulcers in the duodenum. The chronic ulcers were found more frequently in the duodenum than in the stomach, and in only one case was there a chronic ulcer in the esophagus.

Acute ulcers in the esophagus and stomach are nearly always multiple, but there were many cases in which a single acute ulcer was found in the esophagus, stomach, or duodenum. The chronic ulcers occurred as a single ulcer in the majority of cases, but there were 10 cases of multiple chronic ulcers in the duodenum.

TABLE 2.—*Age Distribution of Persons with Acute Gastrointestinal Ulcers*

Age, Yr.	Total No. of Cases	Cases of Ulcer	Percentage
Under 1	84	12	14.2
1 to 5	28	4	14.3
6 to 10	23	2	8.6
11 to 20	34	5	14.7
21 to 30	60	13	21.6
31 to 40	104	17	16.3
41 to 50	173	25	14.4
51 to 60	189	28	14.8
61 to 70	163	19	11.6
71 and over	85	11	12.9
Totals	943	136	14.4

Age Distribution.—In table 2 the hemorrhagic erosions were included with the acute ulcers, but the mucosal hemorrhages were excluded. The incidence of ulcers in the upper gastrointestinal tract was recorded for each decade of life. The highest incidence of ulcers (21.6%) occurred in persons between the ages of 21 years and 30 years, and the next highest (16.3%) occurred between 31 years and 40 years. This corresponds to the incidence of ulcers in our clinical cases. The lowest incidence (8.6%) occurred between 6 and 10 years. In the other decades of life the incidence of ulcers was about the same (14%), including those in infants under one year of age. The incidence in persons over 70 years old was 12.9%. Apparently there is little correlation between age and the incidence of ulcers.

TABLE 3.—*Terminal Pathological Conditions (Stressors) Associated with Acute Gastrointestal Ulcers*

Terminal Condition	Total No. of Cases	Cases with Ulcer	Cases with Focal Hemorrhage	Ulcer Incidence, %
Severe burn of the skin	6	3	1	66.6
Addison's disease	2	0	1	50.0
Pregnancy	8	0	4	50.0
Ulcerative colitis	6	1	2	50.0
Miliary tuberculosis	5	1	1	40.0
Severe injury	19	3	4	36.8
Liver disease	26	6	3	34.6
Peritonitis due to perforation	41	11	3	34.1
Postoperative conditions	179	36	17	29.6
Birth trauma	17	2	3	29.4
Cardiovascular disease	194	22	30	26.8
Pulmonary disease	126	17	16	26.1
Diabetes	8	0	2	25.0
Pancreatic disease	12	3	0	25.0
Chemical poisoning	4	0	1	25.0
Blood dyscrasias	26	2	4	23.0
Malignancy	112	17	7	21.4
Septicemia	23	2	2	17.3
Marasmus	6	1	0	16.6
Cerebral lesions	122	9	7	13.1
Hyperthyroidism	1	0	0	0.0
Totals	943	136	108	25.8

Terminal Pathological Conditions (Stressors).—In table 3 the 943 cases are listed according to the primary cause of death, together with the incidence of ulcer and mucosal hemorrhage of the upper gastrointestinal tract. These terminal pathological conditions may be considered the "stressors" that produced the alarm reaction described by Selye,[2] during which the acute lesions developed.

The incidence of ulcers and mucosal hemorrhages was highest following severe burn of the skin. In three of six cases of severe skin burns there were acute ulcers and in one case focal hemorrhages. In 179 postoperative cases, there were ulcers in 36 and focal hemorrhages in 17. In 41 cases of peritonitis due to perforation, 11 persons had acute ulcers and 3 had mucosal hemorrhages. Birth trauma was also associated with acute lesions in 29.4% of cases. Table 3 shows that the incidence of lesions of the upper gastrointestinal tract was greatest in conditions of profound shock.

Changes in Adrenal Glands.—The adrenal glands were examined in all but 47 of the 943 cases, and the correlation of the gastrointestinal lesions with the pathological abnormalities observed in the adrenal glands is shown in table 4. When there were no microscopic abnormalities of the adrenal gland, the incidence of gastrointestinal lesions was only 16.5%. With slight or moderate congestion or round cell infiltration the incidence of lesions was 25%. However, when there was marked congestion or marked round cell infiltration, the incidence of acute lesions rose to 36%, and when there were hemorrhages and necrosis in the adrenal gland, the incidence was 45.9%. It is striking to note that in the 14 cases in which there was severe destruction of the adrenal tissue, the incidence of acute ulcers and mucosal hemorrhages was 71.4%. Tumor metastasis to the adrenal gland showed a low incidence of acute lesions in the gastrointestinal tract, or 15%.

TABLE 4.—*Changes in the Adrenal Glands Associated with Acute Gastrointestinal Ulcers*

	Total No. of Cases	Cases of Ulcer	Cases of Focal Hemorrhage	Incidence of Adrenal Changes and Ulcers, %
No microscopic abnormalities......	315	24	28	16.5
Slight, or moderate congestion or round cell infiltration..........	335	51	33	25.0
Marked congestion or round cell infiltration	125	33	12	36.0
Hemorrhages or necrosis...........	87	14	26	45.9
Tuberculosis, leukemic infiltration, thrombosis, or atrophy and fibrosis	14	5	5	71.4
Tumor metastasis to adrenals....	20	3	0	15.0
Adrenals not examined...........	47	6	4	....
Totals.........................	943	136	108	

COMMENT

It is evident from the present study that acute ulcers of the gastrointestinal tract are commoner than has been realized. The fact that they are not limited to the stomach and duodenum but are also found in the esophagus, jejunum, ileum, and colon shows that they apparently are the result of some generalized reaction.

Selye[2] has shown that various stresses that affect large portions of the body, such as trauma, surgery, burns, infections, or fatigue, will produce an alarm reaction, and that acute gastrointestinal ulcers have formed during the shock phase of the alarm reaction in rats. It is very difficult to gather evidence of acute ulcers in man during an alarm reaction following some form of systemic stress, because acute ulcers heal so rapidly without leaving a trace and are very difficult to demonstrate by radiography. However, if the stressor happens to be a fatal illness or a fatal traumatic condition, then the necropsy material should reveal acute lesions of the gastrointestinal tract, especially if death occurred soon after the shock phase of the alarm reaction.

In reviewing the necropsy material I was able to demonstrate acute lesions in the upper gastrointestinal tract in about 25% of the total number of postmortem examinations studied. The incidence was greatest in conditions of profound shock, such as severe burn of the skin, postoperative conditions, and severe injury.

In recording the acute lesions of the upper gastrointestinal tract, I included focal mucosal hemorrhages, hemorrhagic erosions, and acute ulcers. I felt that the initial lesion of an acute ulcer may begin as a focal mucosal hemorrhage and then be converted to a hemorrhagic erosion and then to an acute ulcer. It is interesting in this connection to compare these lesions with those described by Schindler[12] in the living, as revealed by gastroscopic examinations. He reported mucosal hemorrhages, pigment spots, hemorrhagic erosions, acute ulcers, and chronic ulcers. Furthermore, he has observed the transition of mucosal hemorrhages into true gastric ulcers.

The mucosal hemorrhages found in the necropsy material varied in size from a punctate hemorrhage to one 3 cm. in diameter. They also varied in depth. Some of these focal hemorrhages occurred so close to the surface of the mucosa that any trauma that may be produced by food or peristalsis could readily break the thin mucosal layer and convert the lesion to a hemorrhagic erosion. Necrosis of a deeper focal hemorrhage could produce an acute ulcer. Acute ulcers may extend superficially or deeply, and may even extend deep enough to cause hemorrhage or perforation. The deeply penetrating lesions can be differentiated from chronic peptic ulcer only by the absence of fibrosis and induration.

It is evident from table 1 that acute ulcers are commoner in the stomach and esophagus than in the duodenum, while chronic ulcers are commoner in the duodenum and very rare in the esophagus. Acute ulcers in the esophagus and stomach are nearly always multiple, and chronic ulcers in the stomach are almost invariably single. However, it is surprising to find that there were 10 cases of multiple chronic ulcers in the duodenum, as compared to 14 cases of a single chronic ulcer in the duodenum. It was thought that multiple chronic ulcers were rare in the duodenum. There were many cases in which the acute ulcer appeared as a single lesion in the esophagus, stomach, or duodenum. Acute ulcers in the esophagus are as common as acute ulcers in the stomach, and one must bear that fact in mind when searching for a source of upper gastrointestinal hemorrhage.

The occurrence of these acute lesions in the upper gastrointestinal tract has no relation to the age of the

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patient, as the incidence is about the same in each decade of life, including infants under one year of age. These acute lesions are manifestations of the alarm reaction produced by the terminal pathological conditions, which are the stressors.

Animal experiments have shown that the adrenalectomized animal is notoriously sensitive to various types of stress, and that the adrenal gland is a stress defense organ. My investigation shows a striking correlation between actual adrenal damage, as demonstrated by microscopic study, and the incidence of ulcerations and mucosal hemorrhages in the upper gastrointestinal tract. The severer the damage to the adrenals the greater was the incidence of acute lesions in the gastrointestinal tract. The adrenal glands may act as defense organs to the systemic reactions produced by stress, and they may play an important role in preventing the initial lesion in the pathogenesis of a chronic peptic ulcer.

SUMMARY

Experimental and clinical evidence of the relation of systemic stress and adrenal damage to the development of acute ulcers in the upper gastrointestinal tract is reviewed. In a series of 943 consecutive necropsies performed at St. Luke's Hospital a special effort was made to find the acute lesions in the upper gastrointestinal tract. There were 136 cases of acute ulcers and 108 cases of focal hemorrhages in the mucosa. The focal mucosal hemorrhages were thought to be the initial lesion of an acute ulcer in some instances.

The incidence of ulcers and mucosal hemorrhages was highest in the terminal conditions, which were more likely to be associated with shock. These terminal conditions are thought to be the stressor agents that produced an alarm reaction, during which these acute lesions developed in the gastrointestinal tract.

The occurrence of acute lesions in the upper gastrointestinal tract following stress has no relation to the age of the patient. The incidence is about the same in each decade of life, including patients under 1 year of age and over 70 years. It is a little higher between 20 and 30 years and lowest between 5 and 10 years.

Our investigation shows a striking correlation between the severity of adrenal damage, as demonstrated by microscopic study, and the incidence of mucosal hemorrhages and acute ulceration of the upper gastrointestinal tract. It is believed that the adrenal gland may be a stress defense organ.

1021 Prospect Ave.

TREPONEMAL IMMOBILIZATION TEST

RELIABILITY OF RESULTS FOR THE DIAGNOSIS OF SYPHILIS

J. Lowry Miller, M.D., Meyer H. Slatkin, M.D., Rose R. Feiner, Ph.D., Joseph Portnoy, M.A.
and
A. Benson Cannon, M.D.,† New York

The diagnosis of syphilis in many patients is, of necessity, made solely on the results of serologic tests of the blood for syphilis (STS). These tests have long been known to be only relatively specific, as they are based on the presence of reagin. This substance not only is developed in the course of treponemal infections but may be found in small amounts in some normal persons, and in larger amounts in certain persons after a variety of infections.

In 1949, Nelson and Mayer[1] described the treponemal immobilization test (TPI) based on an antibody that is distinct from reagin. In animal experiments, Khan, Nelson, and Turner[2] found this antibody to be developed when they used organisms of the Treponema group (T. pallidum, T. pertenue, and T. cuniculi) but not when they used nonvirulent spirochetes. In essence, the treponemal immobilization test is based on the fact that, in the presence of active complement, the motile spirochetes obtained from rabbit's testes are immobilized, if demonstrable amounts of the antibody are present in a patient's blood or spinal fluid. If the difference between the number of organisms motile in the control tube and in the tube containing complement is 50% or more, the test is reported as positive. In humans, Nelson and his group[3] have found the result of the treponemal immobilization test to be positive in cases of untreated syphilis that had passed the primary stage and negative in cases of nonsyphilitic infections, with the exception of infections caused by the Treponema group, such as yaws. In addition, they reported positive results of treponemal immobilization tests in approximately 62% of their cases of untreated primary syphilis. Magnuson and Thompson[4] have confirmed their findings, with the exception of a negative result in 13.8% of the patients with untreated secondary syphilis.

For the past two years, we have performed the treponemal immobilization test to study the reliability, significance, and limitations of its use in the diagnosis and

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From the Department of Dermatology, College of Physicians and Surgeons, Columbia University, the Presbyterian Hospital, and the Vanderbilt Clinic.

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treatment of human syphilis. We have performed 783 tests on serums from 625 patients. In this paper, we are reporting our findings for 455 patients in relation to the reliability of the test. In another paper [5] we will present our findings for the remaining 170 patients, who were classified as false positive reactors or in whom the diagnosis of syphilis was questionable.

The majority of the serums were from patients thought to be syphilitic. They were selected to represent the various phases of syphilitic infection. For comparison with the results from patients thought to be syphilitic, serums were tested from patients with diseases other than syphilis and from supposedly nonsyphilitic subjects. Most serums were obtained from our own facilities in the Vanderbilt Clinic and Presbyterian Hospital; the remainder were sent to us from the Rapid Treatment Center at Bellevue Hospital, from the United States Public Health Hospital in Staten Island, and from various physicians.

With certain changes, the test has been performed with the technique described by Nelson and Mayer.[1] It has been modified to include counting only 25 spirochetes as suggested by Magnuson.[4] When the difference between the result of the treponemal immobilization test and that of the control was close, 50 spirochetes were counted. The medium was changed in accordance with suggestions made by Nelson.[6] The amount of complement used was increased from 5% to 10%. Difficulty with nonspecific immobilization resulted from taking spirochetes from testicular syphilomas that had been present for more than 14 days. Nelson [6] has suggested this may result from sensitization of the spirochetes by antibody developed in the infected rabbit. Nonspecific immobilization also occurs if penicillin or other treponemicidal agents are present. The effects of penicillin can be neutralized by the use of penicillinase. Nonspecific immobilization can also result from collecting the specimens in chemically unclean tubes. In all cases, the Mazzini, VDRL (Veneral Disease Regional Laboratory), and Kolmer tests were performed in our laboratory on the same sample of blood or spinal fluid as was used for the treponemal immobilization test.

TABLE 1.—*Results of Treponemal Immobilization Tests on Blood of Patients with Proved Syphilis*

Original Diagnosis*	No. of Patients	Results of TPI Test		
		Positive	Negative	Doubtful
Primary syphilis	30	24	4	2
Secondary syphilis	39	34	2	3
Congenital syphilis	10	10	..	..
Neurosyphilis	33	33	..	..
Cardiovascular syphilis	8	8	..	..
Gummas	3	3	..	..
Total	123	112	6	5

* Patients are listed under the classification made at the time of diagnosis, which was made on evidence other than the result of the serologic test of the blood for syphilis. The treponemal immobilization tests were often made many years after the original diagnosis.

MATERIAL

In table 1 are presented the results of the treponemal immobilization tests in patients in whom syphilis had been diagnosed on evidence other than the results of the serologic test of the blood for syphilis. This evidence includes results of dark field examinations, clinically typical secondary syphilis, tabes dorsalis, positive reaction of the spinal fluid to the serologic test for syphilis, congenital syphilis with stigma, and dementia paralytica.

TABLE 2.—*Results of Treponemal Immobilization Tests in Patients with Latent Syphilis*

Diagnosis	No. of Patients	Results of Serologic Test for Syphilis			Results of TPI Test	
		Positive	Weakly Positive	Negative	Positive	Negative
Early latent syphilis....	37	37	..	..	37	..
Late latent syphilis....	213	197	4	12	204	9
Total................	250	234	4	12	241	9

TABLE 3.—*Results of Treponemal Immobilization Tests in Nonsyphilitics*

Diagnosis	No. of Patients	Negative Reaction to Serologic Test for Syphilis	*Negative Reaction to TPI Test*
Normal	12	12	12
Diseases other than syphilis....	70	70	70
Total........................	82	82	82

In table 2 are presented the results of the treponemal immobilization tests in patients in whom we felt justified in making the diagnosis of early or late latent syphilis without recourse to the results of the treponemal immobilization tests. In table 3 are found the results of the treponemal immobilization tests in persons with diseases other than syphilis and in persons in whom we had no reason to suspect a syphilitic infection. The results of the serologic test for syphilis, obviously, were completely negative in this group. In table 4 are reported the results of duplicate testing, at varying time intervals, which was done so that we might determine the presence of fluctuation in results of the test. In table 5 are presented the results of the treponemal immobilization tests in spinal fluids contrasted with the results of the serologic test for syphilis done on the same specimens.

TABLE 4.—*Results of Repeat Tests of the Blood Treponemal Immobilization**

No. of Patients	Results of TPI Test			
	Positive	Negative	Doubtful	*Anticomplementary*
34..............	34	..	..	..
31..............	..	31	..	..
5..............	5	..	5	..
5..............	..	5	..	5
4..............	..	..	..	4
3..............	..	3	3	..
1..............	1	..	..	1
Total 83	40	39	8	10

* *Specimens taken from the same patient at different times.*

TABLE 5.—*Results of Treponemal Immobilization Tests and Serologic Tests for Syphilis on Identical Spinal Fluids*

No. of Patients	Result of Serologic Test for Syphilis		Result of TPI Test	
	Positive	Negative	Positive	Negative
19	..	19	..	19
10	10	..	10	..
1	..	1	1	..
Total 30	10	20	11	19

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5. Miller, J. L.; Slatkin, M. H.; Lupton, E. S., and Brodey, M.: Studies on the Value of the TPI Test in the Diagnosis of Syphilis, to be published.

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In table 1, we have purposely listed each patient under the classification that applied when the diagnosis of syphilis could be made with certainty on evidence other than the results of the serologic test of the blood for syphilis. The treponemal immobilization tests were often made years after the diagnosis (as listed) had been made. A glance at this chart will show that the result of the treponemal immobilization test in our experience was positive at the time it was made in all cases of proved congenital, central nervous system, and cardiovascular syphilis. The same was true of gummas. The groups listed as having primary and secondary syphilis are of considerable interest.

In the primary group, the interval from the time of the diagnosis of the chancre to the time of the treponemal immobilization test varies from 0 to 48 years. The four negative results occurred in patients who had been adequately treated when the chancre was present. We use the term "adequately treated" in the sense that it is an amount of treatment given in a time interval that is generally considered to be sufficient. One patient had been treated in the dark field positive seronegative phase, and the treponemal immobilization test was made 29 months later. The second patient had both dark field positive and seropositive reactions and had been adequately treated 36 months before the time of the treponemal immobilization test. The third patient had been adequately treated seven years previously, and the result of the serologic test for syphilis had become negative in six months and remained negative. The fourth patient had had what is usually thought to be more than adequate treatment nine years previously. Of the two doubtful results of the treponemal immobilization tests, one occurred in a patient with dark field positive and seropositive reaction; it is probable that the antibody was only partially developed. The second doubtful result was found in a patient 36 months after adequate treatment. Two other doubtful results are not listed as such, because results of other treponemal immobilization tests, made at different times, were positive.

In the group listed as having secondary syphilis, the interval from the time of diagnosis to the time of the treponemal immobilization test varied from two months to 21 years. The results of the treponemal immobilization tests were negative in two patients. The first patient had had his infection 21 years previously, and the result of the serologic test for syphilis had been negative for 20 years. More than adequate treatment had been given at the time of infection. The second patient had also received more than adequate treatment at the time of her infection, three years previously. The result of the serologic test for syphilis had also become negative. Of the three doubtful results of treponemal immobilization tests, two occurred in patients who had received adequate treatment, one three years and the other seven years previously. In both, the results of the serologic test for syphilis were negative. The third patient had been adequately treated four years previously, but the result of the serologic test for syphilis was still positive.

In the group of 10 congenital syphilitics, all of whom had positive reactions to the treponemal immobilization tests, the results of the serologic test for syphilis were still positive in seven and weakly positive in three at the time the treponemal immobilization tests were made. In the group of 33 patients listed as having central nervous system syphilis, the results of the serologic test of the blood for syphilis were still positive in 28 and had become negative in 5. The results of the serologic test of the spinal fluid for syphilis were positive in 29 and had become negative in 4. The results of the treponemal immobilization tests of the spinal fluid were positive in all 10 cases in which it was done. Of the group of 33 patients listed as having central nervous system syphilis, 17 had tabes dorsalis, 5 of whom had optic atrophy. Five patients had taboparesis, 7 asymptomatic central nervous system syphilis, and 4 the meningovascular type.

In the group of eight cardiovascular cases, the results of the serologic test for syphilis were positive in six, had become negative in one, and were weakly positive in one; the results of the treponemal immobilization tests were positive in all. The results of the serologic test for syphilis were positive in the three cases of gummas.

Analysis of table 2 shows that the results of the treponemal immobilization tests were positive in all the 37 patients in whom we felt the diagnosis of early latent syphilis was justified. Of the 213 patients thought to have late latent syphilis, 204 proved to have a positive reaction to the treponemal immobilization test and 9, or 5%, proved to have a negative reaction. It is interesting that the 12 patients whose reaction to the serologic test for syphilis had become negative, but were judged to have late latent disease because of inadequacy of treatment or for other reasons, all proved to have a positive reaction to the treponemal immobilization test. Of the four patients with weakly positive reactions to the serologic test for syphilis, two proved to have positive reactions to the treponemal immobilization tests and two negative reactions. Of the nine patients with negative reactions to the treponemal immobilization tests, three had been treated for syphilis more than 30 years previously, and their reactions to the serologic test for syphilis were still fluctuating. Two patients had been treated for syphilis more than 10 years previously, and their reactions to the serologic test for syphilis were positive. The remaining four patients had had a diagnosis of syphilis for less than 10 years. In two of these the reactions to the serologic test for syphilis were becoming negative at the time the treponemal immobilization test was performed. The third patient, with a low titer as determined by the serologic test for syphilis, was not influenced by treatment. The fourth had a very high titer, not influenced by large amounts of penicillin.

In table 3, it will be observed that in 12 supposedly normal subjects the reactions to both the serologic test for syphilis and the treponemal immobilization tests were negative. In the course of testing normal subjects, we found one person with a positive reaction to the serologic test for syphilis and a negative reaction to the treponemal immobilization test. This patient will be described in another paper [5] dealing with patients in whom the diagnosis of syphilis is doubtful. Seventy patients with diseases other than syphilis are listed. The reactions to the serologic test for syphilis and treponemal immobilization tests were all negative. The patients had a wide variety of diseases, such as are to be found in a clinic and general hospital. With the exception of seven patients with multiple sclerosis, there was little duplication of diagnosis in the 70 patients. Two cases of leprosy are among the group.

Examination of table 4 will show that, in our experience, if the result of the treponemal test was positive or negative, repeat tests performed on different blood specimens from the same patients showed no change. There was a variation between doubtful and positive in the results of the treponemal immobilization tests for five patients and between doubtful and negative for three patients. The five patients whose reaction to the treponemal immobilization tests were anticomplementary at one time and negative at another, the one patient whose reactions were anticomplementary and positive, and the four patients whose reactions remained anticomplementary are listed for completeness. It should be emphasized that, in the 83 patients having two or more treponemal immobilization tests, there was no reversal, either from positive to negative or negative to positive.

In table 5 it will be observed that the results of the serologic test for syphilis and treponemal immobilization test agree in 19 instances in which both are negative and in 10 where both are positive. One disagreement occurs, in a patient in whom the results of the serologic test for syphilis is negative and that of the treponemal immobilization test is positive. This patient had had primary optic atrophy since 1937. Four examinations of her spinal fluid from 1939 to 1945 showed positive reactions to the serologic test for syphilis. In 1951, the result of the serologic test of her spinal fluid was negative, but the result of the treponemal test was positive.

COMMENT

The major purpose of our study was to test the reliability of the treponemal immobilization test for the diagnosis of human syphilis. With this objective in view, the data are presented in the form that as nearly as possible fits the purpose. Our study was begun and has been continued with a completely open mind. Analysis of the evidence here presented seems to support the conclusion that the treponemal immobilization test is extremely reliable.

Of the 123 patients with proved syphilis, 6 had negative reactions to the treponemal immobilization test. These six patients all had been adequately treated early in the course of their infection, and the treponemal immobilization tests were performed 29 months to 21 years later. The results of the serologic test for syphilis were all negative and have been so, often for years. From this and other data, we feel that the results of the treponemal immobilization test probably becomes negative after the passage of a certain period of time, provided adequate treatment is given in the early phase of the infection. Absolute proof of this must, obviously, await longer studies. It is probably significant that all the negative results of the treponemal immobilization tests occurred in the group treated as having early syphilis, as there was complete agreement between the clinical diagnosis and the results of the treponemal test in the later phases of syphilis.

The results in table 2 show that the results of the treponemal immobilization tests were positive in all cases thought to be of early latent syphilis. Among 213 patients thought to have late latent syphilis, the results of the treponemal immobilization tests were positive in 204 and negative in only 9. Among these nine patients with negative reactions to the treponemal tests, the diagnosis of syphilis had been made in five, from 10 to 47 years before the treponemal immobilization tests were performed. Here we believe the explanation that the reaction to the treponemal immobilization test has probably become negative is correct. In the remaining four patients, the diagnosis of syphilis had been made for less than 10 years. In three of these, the results of the serologic test for syphilis were already negative, or of definitely low titer, at the time the treponemal immobilization tests were made. In the last patient, the result of the serologic test for syphilis was strongly positive but there was no other evidence for the diagnosis of syphilis. The possibility that the result of the treponemal immobilization test had become negative or error in diagnosis could account for these four negative results. Although our explanation of the nine examples of negative reactions of the treponemal immobilization tests may not be correct, we do not feel that they offer any challenge to the accuracy of the treponemal immobilization test. The diagnosis of late latent syphilis, at best, always offers a problem. This difficulty in diagnosis is illustrated in the report of Mohr and colleagues.[7] They found the result of the treponemal immobilization test to be positive in 96.8% of a group of patients with asymptomatic late syphilis. However, in a group of patients thought to have latent syphilis, the result of the treponemal immobilization test was positive in only 76.3%.

In table 3 there are no examples of positive reactions to the treponemal immobilization test. These tests were made on patients with a wide variety of diseases and would offer opportunity for a false positive reaction. We found no example. We did encounter a number of examples of unexpected positive reaction to the treponemal immobilization test; when the patients were confronted with this evidence, an admission of a previous syphilitic infection was obtained in every case.

From our experience to date, we are convinced that the treponemal immobilization test is an extremely accurate test for the diagnosis of human syphilis. We feel that the result of the test may become negative after the passage of a certain period of time, particularly if treatment, in the early stages of the disease, was adequate.

The place the treponemal immobilization test is to occupy as a guide to treatment requires more experience. We see no justification for further treatment of a more than adequately treated patient with negative reaction to the serologic test for syphilis, solely on the basis of a positive reaction to the treponemal immobilization test. On the other hand, the treponemal immobilization test is of great help in ferreting out the syphilitic from the group of patients often too easily classified as false positive reactors. We have noted an increasing tendency on the part of physicians to dismiss as false positive the results of the serologic test for syphilis. This diagnosis should be made only after every means is exhausted and not as an avenue of easy escape.

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[7] Mohr, C. F.; Moore, J. E.; Nelson, R. A., and Hill, J. H.: Studies on the Relationship of Treponemal Antibody to Probable Biologic False Positive Serologic Tests for Syphilis, Am. J. Syph. **34**: 405 (Sept.) 1950.

The treponemal test is a complicated procedure requiring considerable trained personnel and expensive equipment and supplies. This has, of necessity, limited its use to research up to the present time.

CONCLUSION

1. The treponemal immobilization test has proved, in our experience, highly accurate in the diagnosis of human syphilis.

2. The result of the test probably becomes negative after a certain time in patients who have had syphilis, particularly if adequate treatment was given in the early stages.

3. Further treatment of the patient should be determined by present criteria. The place of the treponemal immobilization test here requires more study.

630 W. 168th St.

EPIDEMIC OF VIRAL HEPATITIS APPARENTLY SPREAD BY DRINKING WATER AND BY CONTACT

John D. Farquhar, M.D., Joseph Stokes Jr., M.D.
and
W. D. Schrack Jr., M.D., Philadelphia

There is conclusive evidence that the virus of epidemic hepatitis is present in the stools of infected persons. Whether cross infection results from this source alone, from the urine, and/or from the nasopharyngeal secretions is still debatable. Epidemiological evidence has suggested to some workers that the virus is spread by nasopharyngeal secretions. However, such epidemiological studies have not been supported by studies in volunteers. No sound evidence has been obtained for the presence of the virus in nasopharyngeal secretions or in the urine of patients with epidemic hepatitis.

Earlier work by Findlay and Willcox [1] in Africa suggested the presence of the virus in urine. It has since been suggested by the same workers that this may have resulted from contamination of the urine with infected blood, in cases of schistosomiasis.

Transmission of the epidemic hepatitis virus by the bites of insects and/or by passive transfer through the medium of insects has not been proved, but in most epidemics spread by insect bites seems very unlikely. As in typhoid, the danger of passive transfer of hepatitis by flies contaminated by feces must always be considered as a possible mode of spread, although perhaps not an important one. However, spread by contaminated drinking water has been conclusively demonstrated,[2] and suggestive evidence has been obtained that the virus can be transmitted by contaminated milk [3] and food.[4]

It is rare to find two of these modes of spread occurring simultaneously in a single epidemic. That a virus, which appears to be water-borne in certain groups of concurrent cases, can also in the same epidemic in other groups proceed leisurely by serial transfer at approximately a 30 day interval is important in characterizing the normal pattern of the disease. It is the purpose of the present report to record small groups of both multiple and serial cases occurring in the same rural outbreak of hepatitis, which apparently resulted from such a dual mode of transmission.

DESCRIPTION OF THE EPIDEMIC

The epidemic occurred in an isolated mountainous area of Pennsylvania. The families involved lived on small farms within 15 miles of each other. Each family obtained its water from its own drilled well, and each farm had its own cesspool. This section of the Appalachian foothills has a deep layer of shale underlying a thin layer of top soil.

The clinical picture of the illness was quite typical of acute infectious hepatitis with jaundice. The patients had fever for the first few days, anorexia, nausea, vomiting, abdominal pain or distress, dark urine, often light stools, jaundice, and an enlarged, tender liver. The illnesses lasted from two to four weeks, and all patients apparently recovered completely.

The sequence of events may be more easily followed by referring to the chart. Hepatitis made its initial appearance in three different families at approximately the same time. The families were the T., D., and K families. Mr. T.'s two married daughters, Mrs. McCa. and Mrs. B., were among the first patients. Mrs. McCa. had symptoms of hepatitis on Feb. 21, 1948, and Mrs. B. during the first part of March. These sisters did not live on the T. farm, but visited there regularly every second Sunday. At about the same time members of two other families became involved. Hepatitis developed in both L. D. and his girl friend M. K. on Feb. 25. The D. and K. families lived on farms approximately one mile apart. None of these initial patients had a history of exposure to infectious hepatitis or of having received any parenteral injections.

Epidemiologist, Department of Health, Commonwealth of Pennsylvania (Dr. Schrack).

From the Children's Hospital of Philadelphia and Department of Pediatrics, School of Medicine, University of Pennsylvania (Drs. Farquhar and Stokes).

This investigation was conducted under the sponsorship of the Commission on Liver Disease, Armed Forces Epidemiological Board, Washington, D. C., and supported by the Office of the Surgeon General, Department of the Army.

[1] Findlay, G. M., and Willcox, R. R.: *Transmission of Infective Hepatitis by Faeces and Urine: Preliminary Communication,* Lancet 1:212, 1945.

[2] Neefe, J. R., and Stokes, J., Jr.: *An Epidemic of Infectious Hepatitis Apparently Due to a Water Borne Agent: Epidemiologic Observations and Transmission Experiments in Human Volunteers,* J. A. M. A. **128:** 1063, 1945.

[3] Murphy, W. J.; Petrie, L. M., and Work, S. D., Jr.: Outbreak of Infectious Hepatitis, Apparently Milk-Borne, Am. J. Pub. Health **36:** 169, 1946.

[4] Read, M. R.; Bancroft, H.; Doull, J. A., and Parker, R. F.: Infectious Hepatitis—Presumably Food-Borne Outbreak, Am. J. Pub. Health **36:** 367, 1946.

Secondary cases began to appear on the first of April. Mr. McCa. became ill with hepatitis on April 1. Mr. D. and his other son, D. D., became ill on April 3, and Mrs. D. on April 10. Staying with the D. family at this time was K. S., Mrs. D.'s nephew. K. S. returned home, where hepatitis developed on April 15. He transmitted the disease in serial fashion to the other three members of the household, who became ill on May 22, June 24, and July 4.

D. D. was married to one of the four McCo. daughters, and the couple apparently divided their time between the D. and McCo. farms. D. D. was confined to bed with hepatitis at the D. family farm. The whole McCo. family visited the D. farm twice during this time, and in the latter part of April D. D. was well enough to return to the McCo. farm. Sometime early in June hepatitis with jaundice developed in Mr. McCo. and his four daughters at the same time. Although the exact date of onset could not be fixed, the family and physician were certain that these five members of the McCo. family became ill with hepatitis almost simultaneously.

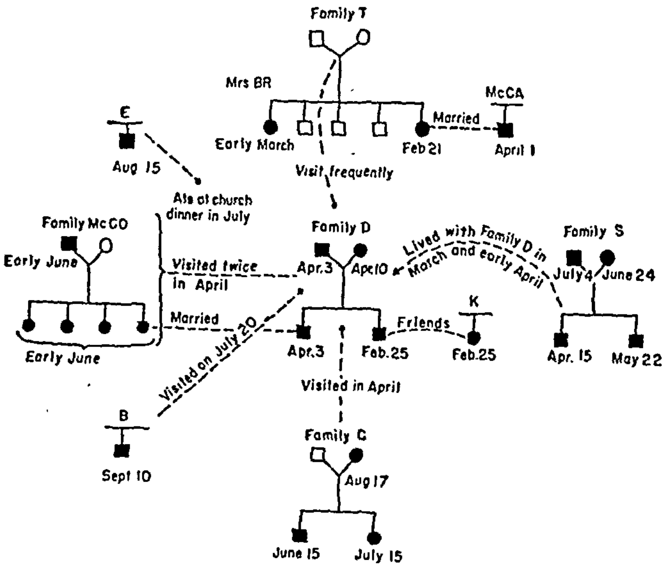

Chart showing the date each patient became ill and the apparent source of infection.

The C. family visited the D. farm frequently, and were there in April when the D. family had hepatitis. A son became ill on June 15 and his sister one month later on July 15. The mother had hepatitis beginning one month after her daughter on Aug. 17.

J. E., a highway worker, ate at a church dinner in this farm community in July and in August became jaundiced with hepatitis. One of the most interesting cases from an epidemiological viewpoint was that of J. B. This young adult visited the D. farm for one day on July 20, three months after the D. family's recovery from hepatitis, and returned to his home about 75 miles away. Hepatitis developed on Sept. 10. He had no other known contact with hepatitis, and had received no injections of any kind. The incubation period thus appears to have been 52 days.

COMMENT

The almost simultaneous appearance of hepatitis in L. D., M. K., and Mrs. McCa. suggests a common source, which could not be traced. It is possible that this earlier source may have been the T. family itself, inasmuch as the disease did not seem to spread among members of this family, who may have been immune. However, no history of previous disease among them could be obtained.

Mrs. B. became ill with hepatitis long enough after her sister, Mrs. McCa., became ill (about 2 weeks) to have contracted the disease from her sister through personal contact. Mr. McCa. apparently contracted his infection from his wife. J. E. probably was infected by the virus at a church dinner attended by many of these involved families, among whom there were two who became clinically ill during the same month in which the dinner occurred.

For the remaining cases the D. farm served as the common denominator in the spread of the disease. The almost simultaneous appearance of hepatitis in three of the D. family and the explosive outbreak in the McCo. family suggested the possibility of a common source of infection, such as drinking water. The onset of hepatitis in J. B. 52 days after he had spent a single day at the D. farm, which was three months after the D. family's recovery, suggested a water-borne infection or possibly a carrier state in the D. family. The incubation period of infectious (epidemic) hepatitis in instances in which the virus is water-borne may be prolonged, presumably because of dilution or attenuation of the virus. Neefe and one of us (J. S.) [2] observed incubation periods varying from 61 to 71 days in four volunteers who drank water that had been contaminated with the virus about three months before the water was ingested. Also, the same authors noted prolongation of the incubation period of a water-borne virus whose incubation period had been carefully determined in volunteers when the water had been subjected to chlorination and coagulation procedures.

On the basis of these epidemiological findings, it appeared possible that water from the D.'s well might be a source of virus. The well and cesspool were found to be not over 50 ft. (15 m.) apart, and the cesspool was located in somewhat higher ground than the well. Since the shale rock found in this area characteristically has many crevices, it seemed possible that the well at the D. farm was being contaminated from their cesspool.

Cultures of this well water yielded coliform organisms in three out of five samples. Two samples taken on Sept. 16, 1948, were negative. Both specimens collected on Oct. 27, 1948, were positive for coliform organisms, yielding 38 and over 240 coliform organisms per 100 ml. of water. Water collected on Nov. 4, 1948, contained 9 coliform organisms per 100 ml. It is worth noting that the positive cultures were obtained on samples collected during rainy weather, and at the time of the epidemic there had been a great deal of rain. Thus there was at least intermittent fecal contamination of the well water on the D. farm. The D. family filled their old cesspool with rock and soil sometime between Nov. 4 and Dec. 1, 1948, and built a new cesspool 300 ft. (92 m.) from the well. Following this, on Dec. 1, two samples of well water were negative for coliform organisms.

Since the virus of infectious hepatitis is known to have been present in the stools, it is probable that this virus found its way from the cesspool to the drilled well by way of the shale crevices. Probably virus from L. D.'s stools contaminated their well. The fact that three members of the D. family became ill with hepatitis almost at the same time and the simultaneous outbreak in the five members of the McCo. family suggest a water-borne infection. Spread by food cannot be ruled out, but the demonstrated contamination of the well strongly favors water as the source. Spread of the infection by personal contact did occur and is evident in the successive involvement of members of the C. and S. families and in the development of hepatitis in Mr. McCa.

An approximate incubation period in this particular epidemic of hepatitis can be determined by noting the spread in several different families. The interval between the onset of hepatitis in two individuals or groups is not necessarily the incubation period, since the period of infectivity, although probably highest at the onset, extends both before and after the onset of illness for many days or even weeks. However, the following intervals may furnish an approximation of the incubation period in this epidemic:

Apparently by contact	
1. Mrs. McCa. to Mr. McCa.	39 days
2. R. C. to L. C.	30 days
3. L. C. to Mrs. C.	33 days
4. K. S. to S. S.	37 days
5. S. S. to Mrs. S.	33 days

Apparently by water	
1. D. D. and Mr. D.	38 days
2. Mrs. D.	45 days
3. The 5 McCo.'s	40 to 60 days
4. J. B.	52 days

The average incubation period for cases apparently spread by contact is 34 days, while those cases in which the virus was apparently water-borne had an average incubation period of 46 days. The early cases considered to be water-borne had a relatively short incubation period, while the later ones had a long incubation period. This difference may be due to progressive attenuation or dilution of the virus in water, providing continual contamination of the water was not occurring from a carrier.

SUMMARY

An epidemic of acute infectious (epidemic) hepatitis affecting 22 persons occurred in an isolated rural area of Pennsylvania. The origin of the infection could not be determined, but subsequent cases were traced to one farm. The well water on this farm was found to be fecally contaminated, presumably from the nearby cesspool. Infection was apparently spread both by drinking water and by contact.

1740 Bainbridge St. (Dr. Stokes).

OUTBREAK OF INFECTIOUS HEPATITIS—PRESUMABLY FOOD-BORNE

Lieut. Col. Gustav G. Kaufmann (MC), United States Army, Victor M. Sborov, M.D., Washington, D. C.
and
W. Paul Havens Jr., M.D., Philadelphia

The way or ways in which infectious hepatitis is transmitted under natural conditions are poorly defined, but it is believed that the intestinal-oral circuit is an important route of spread. It has been emphasized that personal contact[1] is a common medium of transmission, although epidemics presumably caused by contaminated water,[2] food,[3] and milk[4] have been described. However, with the exception of the report by Neefe and Stokes,[2b] who described the occurrence of nonicteric hepatitis in volunteers after the ingestion of well water from a children's camp in which an epidemic occurred, the lack of suitable laboratory methods has made it impossible to incriminate with certainty contaminated foodstuffs or water even though the circumstances attending certain outbreaks strongly suggested this relationship. Since so many epidemiological aspects of infectious hepatitis are poorly understood, it is believed to be important to document any evidence that, although not conclusive, may contribute to a better understanding of the natural history of the disease and its control. It is the purpose of this paper to describe a small, localized, presumably food-borne epidemic in an Army camp.[5]

HEPATITIS AT CAMP EDWARDS

Camp Edwards, Massachusetts, is situated on the southern shore of Cape Cod, southeast of Boston. During the period from Nov. 15, 1950, to Sept. 24, 1951, 13 cases of viral hepatitis occurred there among troops whose mean strength ranged from 8,000 to 10,000 men. These cases were scattered both in time and place, and the last three occurred during the summer in different companies, with no known contact with the men in whom hepatitis subsequently developed in the outbreak described below.

In October and early November, 1951, a small, localized epidemic of hepatitis made its appearance in three barracks (1143, 1144, and 1145) housing B Battery of the 380th AAA Gn Battalion, numbering 87 men (figure). The first patient (R. C.) became sick on Oct. 2. He was a cook in the battery mess and, failing to report

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From the United States Army Hospital, Camp Edwards, Massachusetts, the Army Medical Center, Washington, D. C., and the Jefferson Medical College, Philadelphia.

This investigation was conducted under the sponsorship of the Commission on Liver Diseases, Armed Forces Epidemiological Board and was supported, in part, by the Office of The Surgeon General, Department of the Army, Washington, D. C.

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[2] (*a*) Gauld.[1] (*b*) Neefe, J. R., and Stokes, J., Jr.: An Epidemic of Infectious Hepatitis Apparently Due to a Water Borne Agent: Epidemiologic Observations and Transmission Experiments in Human Volunteers, J. A. M. A. **128**: 1063-1075 (Aug. 11) 1945. (*c*) Harrison, F. F.: Infectious Hepatitis: Report of Outbreak, Apparently Water Borne, Arch. Int. Med. **79**: 622-625 (June) 1947. (*d*) Olin, G.: A Hepatitis Epidemic Presumably Spread by Water, Acta med. scandinav., supp. 196, pp. 381-391, 1947.

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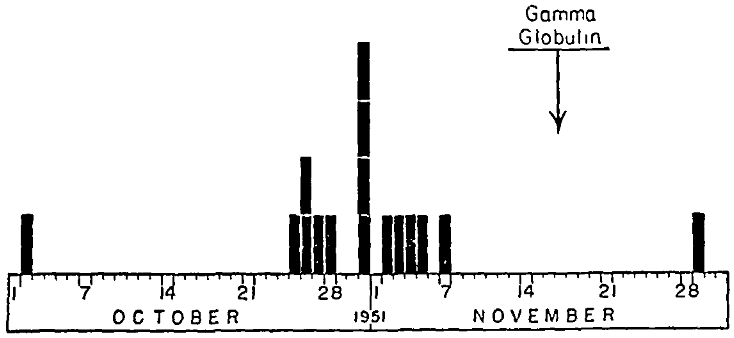
[5] Havens, W. P., Jr., and Sborov, V. M.: Report of an Outbreak of Hepatitis, Camp Edwards, Mass., submitted to the Surgeon General, U. S. Army, Nov. 24, 1951.

sick, continued to work for five days after the onset of symptoms. Twenty-three days later (Oct. 25), the second case (H. S.) appeared, and during the ensuing 13 days (from Oct. 26 to Nov. 7) 13 additional cases of hepatitis occurred. Fourteen of these cases were almost equally distributed in the three barracks, with five in 1143, four in 1144, and five in 1145. One patient, also a cook, lived off the post, although he ate one meal a day in the battery's mess hall, where he worked. The only other case in the entire camp occurred on Nov. 1, in a laboratory technician from another battalion who handled potentially infectious materials.

With two exceptions (R. C. and H. S.), all the patients had been assigned to B Battery for at least four months before the onset of their disease and had been in Camp Edwards for periods ranging from four to eight months. Patients R. C. and H. S. left Inchon, Korea, July 2, 1951, and arrived in California July 21; after furloughs, on Sept. 1, 1951, they were attached, as cooks, to the 380th AAA Gn Battalion (B) at Camp Edwards. All patients had received various immunizations at some time during the six months before the onset of hepatitis, and the two men from Korea had received several inoculations there during May and June, 1951. However, in spite of the possible opportunities that may have existed for parenteral transmission of hepatitis, the clinical course of the disease simulated that ordinarily regarded as characteristic of the naturally acquired epidemic hepatitis rather than the artificially transmitted disease. All the patients had an abrupt onset with chill or chilliness, followed by anorexia, nausea, and vomiting. The course of the disease was mild, and, although in all cases detected there was jaundice, the maximum measured total serum bilirubin was 6 mg. per 100 cc.



Progress of the epidemic of infectious hepatitis. Normal immune globulin (2 ml.) was given to 72 men on Nov. 17, 1951. Black rectangle = case of hepatitis.

HOUSEKEEPING UNIT OF BATTERY B

The men in B Battery were fairly equally distributed numerically among the three barracks (1143, 1144, and 1145), each of which has space for 14 beds on the first floor and 10 beds on the second floor. In addition, there are two rooms on the first floor with two beds each, and two rooms on the second floor, one with four beds and one with two beds. There is a drinking fountain in each barracks. The sewage system of each of the three barracks drains into a central pipe, which also receives the sewage from three other adjacent barracks. This pipe then feeds into the main sewage system. All the men in B Battery eat in one mess hall, which is used and operated exclusively by the battery. The food is served at a counter, cafeteria style, in metal trays. After eating, the men remove the left-over food and rinse the trays and utensils, which are then returned to the kitchen, where they are washed with hot water and soap or detergent, rinsed, and exposed for two minutes to hot running water at a temperature of approximately 180 F. The water supply of the mess comes from the main system of the camp, and no storage tanks for drinking water are present in the mess hall.

In addition to the cook who originally contracted hepatitis, two other cooks working in the mess subsequently contracted the disease. The other 12 patients were engaged in the various activities of their battery. Although it is the custom for most of the men in the battery to rotate through KP duty on an average of once every three weeks, it may be pointed out that four of the patients with hepatitis had had no recent experience with KP duty.

CONTROL

As soon as the nature of the epidemic was appreciated, the personnel of the mess hall were ordered to scrub their hands with soap and water immediately after reporting to the mess for duty. During the ensuing two months, all the men in the battery were examined daily for signs or symptoms of hepatitis, and determinations of bilirubin and urobilinogen in the urine were made three times a week. Men suspected of having the infection were hospitalized for observation. Since the disease was believed to be epidemic hepatitis and because of the high incidence (15 cases among 87 men) and the sharply localized character of the outbreak, 2 ml. of normal immune globulin was administered intramuscularly to each of the other 72 members of B Battery who had apparently not yet contracted hepatitis, on Nov. 17, 1951. (Twenty-two other men who were assigned to the battery in the third week of December also received 2 ml. of normal immune globulin intramuscularly, on Dec. 21, 1951.)

On Nov. 29, 12 days after the inoculation with normal immune globulin, an additional case of hepatitis occurred in a member of the battery. This man worked in the motor pool but had been in close contact with several of the patients who had previously contracted hepatitis. No other cases occurred in the battery up to Feb. 29, 1952, the last date of observation.

COMMENT

Within a period of 14 days (Oct. 25 to Nov. 7, 1951), 14 cases of viral hepatitis occurred in a single battery. The time of onset of disease in this group ranged from 23 to 36 days after the appearance of symptoms (Oct. 2) in the first patient, a cook who worked regularly in the mess hall of the battery. The onset was abrupt in all cases, and the evidence strongly suggests that this explosive small outbreak represented an epidemic of the naturally acquired disease, probably initiated by exposure of a fairly homogeneous and closed group to at least one food handler carrying virus, i. e., the cook (R. C.) who was the first to contract the disease. The fact that this man worked in the mess for five days after the onset of symptoms, during the time when virus is known to be in feces, lends support to this hypothesis. Whether the last patient to become ill (Nov. 29) contracted his disease in the same way or whether he represents an example of transmission by personal contact cannot be determined, although his date of onset suggests that he had been infected about the time of the explosive outbreak (Oct. 25 to Nov. 7) rather than earlier (Oct. 2), when the first patient became sick.

It is of interest to speculate on the possible source of infection of the first patient (R. C.), who left Korea early in July, 1951. He had arrived in Camp Edwards on Sept. 1 and had had no known contact with any of the three sporadic cases of hepatitis that had occurred there during the summer. Whether R. C. might conceivably represent a carrier of virus from an area (Korea) where hepatitis is widespread [6] cannot be determined, although the recent demonstration of a prolonged carrier state in infants [7] suggests that this may occur more frequently than has been suspected.

Weights and Incidence of Hepatitis in Seventy-Two Men Who Received Normal Immune Globulin Intramuscularly on Nov. 17, 1951*

Weight, Lb.	No. of Men Inoculated	No. of Men with Subsequent Hepatitis
127-140	4	0
141-160	34	0
161-190	22	0
191-200	4	1 †
201-226	8	0
Total	72	1

* Dose, 2 ml.
† Onset of hepatitis Nov. 29, 1951.

Earlier reports [8] indicated that normal immune globulin is of value prophylactically when given in amounts of 0.06 to 0.12 ml. per pound of body weight, and subsequent observations suggested that as little as 0.01 ml. per pound is effective.[9] In the accompanying table are recorded the weights of the 72 men who received 2 ml. of normal immune globulin intramuscularly on Nov. 17, and it is of interest that the only one who subsequently contracted hepatitis (12 days later, Nov. 29) weighed 195 lb. (88.5 kg.). The fact that the recently reported effective minimal dose of normal immune globulin [9] did not prevent the development of hepatitis in this man may indicate (*a*) a severer and better established infection when it was injected, (*b*) a lesser amount of hepatitis antibody in the immune globulin used, or (*c*) a variety of undeterminable factors in the host. Although the lack of a control group makes it impossible to say whether the immune globulin exerted a prophylactic effect in those inoculated, the occurrence of this last case indicates the probability that a potential source of infection had existed for the whole group of 72 men when they received the globulin.

SUMMARY

The occurrence of a sharp outbreak of viral hepatitis, with 14 cases appearing from 23 to 36 days after a cook in the battery mess contracted the disease, strongly suggests that contaminated food might have been the source of infection, although the role of personal contact in this outbreak cannot be disproved.

15 Dix St., Winchester, Mass. (Lieutenant Colonel Kaufmann).

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CORTICOTROPIN AND CORTISONE TREATMENT FOR SYSTEMIC LUPUS ERYTHEMATOSUS

Edmund L. Dubois, M.D., Robert R. Commons, M.D., Paul Starr, M.D., Charles S. Stein Jr., M.D.
and
Robert Morrison, M.D., Los Angeles

We have studied 64 patients with systemic lupus erythematosus, 30 of whom were treated with various regimens that included corticotropin (ACTH) and/or cortisone therapy. The incidence of remissions and the life expectancy in treated and untreated patients have been compared. The 34 untreated patients studied all died of systemic lupus erythematosus in the Los Angeles County Hospital during the 15 year period from January, 1935, to January, 1950. Spontaneous clinical remissions after onset of the unequivocal active disease occurred in seven of these patients. The mean duration of life after the onset of systemic lupus erythematosus in this group and in similar groups reported by Klemperer [1] and Tumulty [2] is presented in table 1. The 30 patients receiving corticotropin or cortisone were all treated in this hospital prior to July 1, 1951. The diagnosis was confirmed in each patient by one or more of the following symptoms: typical skin rash (23 patients), the presence of L. E. cells (demonstrated in 23 of 28 patients examined for them), and typical pathological tissue conditions.[2a] Of the 64 patients studied, 60 (94%) were women. Table 2 shows the effect of hormone therapy on life expectancy and remissions in the 30 treated patients. There is no evidence yet that life expectancy is prolonged.

This study was supported *in part* by a grant from Ciba Pharmaceutical Products, Inc., Summit, N. J.

From the Department of Medicine of *the University* of Southern California School of Medicine and the Los Angeles County Hospital.

The bulk of the *corticotropin (ACTH)* used in this study was supplied by United Laboratories, Ltd., *Pasadena, Calif.*; the remainder was purchased from The Armour Laboratories, *Chicago.* The cortisone (cortone®) was obtained from Merck & Company, Inc., Rahway, N. J.

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2. Tumulty, P. A., and Harvey, A. M.: The Clinical Course of Disseminated Lupus Erythematosus, *and Evaluation* of Osler's Contributions, Bull. Johns Hopkins Hosp. **85**: 47-73 (July) 1949.

2a. Hargraves, M. M.; Richmond, H., *and Morton*, R.: Presentation of 2 Bone Marrow Elements: The "Tart" Cell and the "L. E." *Cell, Proc. Staff Meet., Mayo Clin.* **23**: *25-28* (Jan. 21) 1948.

PROBLEMS OF THERAPY

Dosage of Corticotropin and Cortisone.—The amount of corticotropin or cortisone to be used in the treatment of systemic lupus erythematosus can be judged only by the clinical effects produced. Suppression of fever is a guiding factor in determining the correct dose during the early stages of treatment. If a "Cushingoid" appearance is obtained, there is usually a simultaneous remission of the disease. The appearance and remission may be maintained with small doses of corticotropin or cortisone (cases 3 and 5). Individual response to therapy varies greatly. Some of our patients have had dramatic and lasting remissions when given as little as 5 mg. of corticotropin intramuscularly every six hours for 10 days. In others, large doses failed to induce remissions (case 1). The following range of treatment schedules failed to produce remissions in a total of 14 patients (group 2 in table 2): (*a*) 5 to 10 mg. of corticotropin given intramuscularly two to six times daily for 8 to 43 days; (*b*) 12.5 to 40 mg. of corticotropin administered by continuous intramuscular clysis daily for 3 to 14 days; (*c*) 10 to 200 mg. of corticotropin administered by continuous intravenous drip daily for 2 to 24 days; (*d*) 100 to 300 mg. of cortisone given orally or intramuscularly for 6 to 11 days. The last range of dosages of corticotropin indicates the disease may be refractory to massive doses. (The fact that the adrenals were responsive to massive doses was shown by elevated 17-ketosteroid excretion during corticotropin therapy—see case 4.) Small doses of corticotropin may induce a remission, but larger doses may not be effective in treating a subsequent exacerbation in the same patient (table 3). Gordon[3] has pointed out the significant fact that continuous intravenous administration magnifies the effect of corticotropin 10 to 20 times over its effect when given every six hours by the intramuscular route. Continuous intramuscular clyses of the drug will similarly magnify its effect.

TABLE 1.—*Duration of Life After Onset of Systemic Lupus Erythematosus in Untreated Patients**

	Median, Mo.	Arithmetic Mean, Mo.	Geometric Mean,† Mo.
Klemperer's series[1] (20 patients)..........	9	23	13.3
Tumulty series[2] (26 patients).............	..	52	....
L. A. C. H.‡ series (1935-1950—34 patients)	24	38.5	22.4
(Duration of spontaneous remissions that occurred in 7 patients in L. A. C. H. series)	22	35.4	19.9

* Figured according to Moore, F. J.; Cramer, F. B., and Knowles, R. G.: Statistics for Medical Students and Investigators in the Clinical and Biological Sciences, Philadelphia, The Blakiston Company, 1951.

† Periods of time from onset to death appeared normally distributed when treated geometrically. The mean and standard deviation were calculated to be $10^{1.350} \pm 0.5$. From the L. A. C. H. sample it may, therefore, be anticipated that the mean length of life after onset is 22 months, with that for 67% of the patients falling between 7 and 69 months and for 95%, between 2.3 and 223 months.

‡ Los Angeles County Hospital.

The aim of treatment of systemic lupus erythematosus is to produce a Cushing's state as quickly as possible, for it is only when clinical hyperadrenocorticism is induced that the disease is maximally suppressed. States below the Cushing level are satisfactory for maintenance. Table 4 presents the dosage regimens of corticotropin and cortisone that were successful in producing a remission of systemic lupus erythematosus and a Cushingoid appearance. The adequate maintenance doses are also tabulated. The most effective way to produce a Cushing's state is by the use of large intravenously administered doses of corticotropin, such as 40 to 60 mg. or more per day. If after 48 hours on this schedule the patient's fever persists, the daily dose should be raised to 100 mg. intravenously administered or even higher doses arrived at by similar increments. As much as 600 mg. of corticotropin per day has been given safely by the intravenous route.

TABLE 2.—*Effect of Corticotropin and/or Cortisone Therapy on Life Expectancy and Remissions in 30 Patients with Systemic Lupus Erythematosus**

	Duration of Disease, Mo. to Death or to the Present	Duration of Remission, Mo.	Outcome	Autopsy Lesions	Duration of Disease for Group, Mo.		
					Median	Arithmetic Mean	Geometric Mean
Group 1.—Patients receiving single course of therapy:							
(a)† E. L.	8	3	Died	4+	....	....	....
H. J.	48	1	Died	4+	....	....	....
E. G.	48	0.75	Died	No autopsy	....	....	....
D. P.	13	5	Died	No autopsy	....	....	....
					30.5	29.3	22.1
(b)‡ F. B.	23	14	Alive and well	...	....	....	....
C. A.	18	8	Alive and well	...	....	....	....
						20.5	20.3
(c)§ M. R.	72	..	Died	4+	....	....	....
D. P.	228	..	Disease smoldering	...	....	....	....
						150	128
Group 2.—Patients in whom disease was advanced at time therapy was initiated: ‖							
E. S.	84	..	Died	No autopsy	....	....	....
M. Z.	24	..	Died	4+	....	....	....
C. P.	4	..	Died	No autopsy	....	....	....
O. T.	5	..	Died	4+	....	....	....
G. J.	10	..	Died	4+	....	....	....
G. P.	10	..	Died	4+	....	....	....
M. S.	11	..	Died	4+	....	....	....
C. C.	13	..	Died	4+	....	....	....
E. Z.	14	..	Died	4+	....	....	....
J. T.	15	..	Died	4+	....	....	....
R. S.	19	..	Died	4+	....	....	....
J. E.	28	..	Died	4+	....	....	....
M. Re.	2	..	Died	1+	....	....	....
P. S.	6	..	Died	4+	....	....	....
					10.5	17.5	9.2
Group 3.—Patients receiving continuous treatment.**							
M. A.	18	6	Alive and in remission	...	....	....	....
M. Ar.	18	4	Alive and in remission	...	....	....	....
G. F.	5	3	Alive and in remission	...	....	....	....
A. S.	20	2	Alive and in remission	...	....	....	....
M. H.	2.5	1	Alive and in remission	...	....	....	....
R. N.	8	2	Alive and in remission	...	....	....	....
B. R.	21	1	Alive and in remission	...	....	....	....
P. A.	15	2	Alive and in remission	...	....	....	....
					16.5	13.4	10.9

* All data as of July 1, 1951.

† Remission induced, with subsequent relapse and death despite further treatment with small doses. (Dosage schedules *given in table 3.*)

‡ Sustained remission induced. (Dosage schedules given *in table 3.*)

§ Therapy produced no effect; patient M. R. died of the *disease* 9 months after initiation of therapy, and in patient *D. P. the disease* is smoldering.

‖ No definite remission occurred in any patient in *this group* (*range* of dosage schedules given in text). Only one *patient* had massive therapy by the technique advocated in this paper.

** Dosage schedules given in *table* 4.

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[3] Gordon, E. S.: Adrenal Stimulation by Intravenous ACTH, read before the 23rd Annual Meeting of the Central *Society* for Clinical Research, Chicago, Nov. 3, 1951, abstracted, J. Lab. & Clin. *Med.* **36:** 827 (*Nov.*) *1950.*

The solution used for continuous intravenous administration is a dilution of the ordinary corticotropin preparation for intramuscular use in 1,000 cc. of a 2.5% or 5% aqueous solution of glucose, with 10 mg. of heparin sodium per liter added to serve as an anticoagulant to inhibit local thrombophlebitis. At a rate of 10 drops per minute, this amount will usually last about 24 hours. If the needle is placed in a forearm vein, the intravenous drip may run as long as 9 days before it is necessary to change the site of administration. It is not necessary to have a continuous 24-hour drip, but a minimum of 16 hours per day is advisable. The treatment can be given as two 8 to 9 hour venoclyses. If the patient no longer has any readily available veins, the material may be administered in a 2.5% glucose solution as an intramuscular clysis in the anterior thigh area. Frequently, induration and pain occur at the site of the intramuscular clysis, and this can often be alleviated by preliminary injection of 1 cc. (150 to 250 units) of hyaluronidase through the needle, which apparently does not alter the efficacy of the corticotropin. If pain and induration still persist, it should be made certain that the needle, when reinserted, is placed in muscle tissue, since subcutaneous extravasation will produce local reaction. This can be accomplished by striking the needle against the periosteum and then withdrawing it about 2 cm.

Table 3.—*Dosage Schedules That Successfully Induced Remission in a Single Short Course of Therapy and Subsequent Treatment Schedules Used in Three Patients Who Relapsed*

Patient	Initial Treatment Schedule	Duration of Remission	Subsequent Treatment Schedule (Maximum Dose)	Outcome
E. L.	6 mg. every 6 hr. IM for 10 days	3 mo.	15 mg. every 6 hr. IM for 6 days	Died
H. J.	5 mg. every 12 hr. IM for 23 days	1 mo.	25 mg. every 6 hr. IM for 35 days	Died
E. G.	5 mg. every 6 hr. IM for 23 days	3 wk.	20 mg. every 12 hr. IM for 7 days	Died
D. P.	10 mg. every 8 hr. IM for 5 days	5 mo.	None	Died
F. B.	5 mg. every 6 hr. IM for 28 days	Over 12 mo.	None	Living and Well
C. A.	10 mg. every 6 hr. IM for 21 days	Over 10 mo.	None	Living and Well

Within 7 to 14 days after starting continuous intravenous therapy there is usually a slight rise in blood pressure, followed by the appearance of acne, moon facies, hyperglycemia, and glycosuria. In the presence of renal involvement, the blood pressure may be elevated initially in this disease, and in such cases cortisone is the drug of choice. When a clear-cut state of hyperadrenocorticism is reached, the treatment is changed from continuous intravenous administration of corticotropin to intermittent intramuscular injection of approximately 20 mg. of the drug every six hours, or to oral administration of 25 mg. of cortisone every six hours, to maintain the Cushingoid appearance. The patient must be carefully watched at this point for signs of relapse. To date, no patient in whom a Cushing's state has been induced and maintained has died. We agree with Haserick[4] and Soffer[5] that treatment must be continued in order to suppress the disease.

Table 4.—*Dosage Schedules of Patients Receiving Continuous Corticotropin and/or Cortisone* Treatment in Whom a Remission was Induced and Maintained*

M. A.

20 mg. corticotropin every 6 hr. IM for 14 days to produce Cushing's state, then 15 mg. corticotropin every 6 hr. for 1 mo., then 10 mg. every 8 hr. for 2 mos., and finally 25 mg. cortisone every 8 hr. for 3 mo. (maintenance dose)

M. Ar.

50 to 100 mg. corticotropin by continuous IV drip for 3 wk. produced only hypertension. 20 mg. corticotropin every 6 hr. IM plus 100 mg. TCP † per day for 10 days to produce Cushing's state and remission, then 20 mg. corticotropin every 8 hr. plus 100 mg. TCP per day for 6 wk., and finally 25 mg. cortisone every 12 hr. for 2 mo. (maintenance dose)

G. F.

40 mg. corticotropin by continuous IV drip for 14 days to produce Cushing's state, then 10 mg. corticotropin every 8 hr. IM for 2 mo., and finally 25 mg. cortisone every 8 hr. for 3 mo. (maintenance dose)

A. S.

40 to 60 mg. corticotropin by continuous IV drip for 20 days caused hypertensive encephalopathy and remission, followed by crisis on cessation of therapy for 24 hr. A hypertensive state appeared when corticotropin therapy was restarted. Cortisone was then given in the following daily doses:

300 mg., for 7 days
500 mg., for 7 days
400 mg., for 8 days
300 mg., for 3 days
500 mg., for 5 days
200 mg., for 6 days
100 mg., for 4 days
75 mg., for 1 month (maintenance dose)

M. H.

300 mg. cortisone per day for 3 days, then 200 mg. cortisone per day for 3 days, and finally 100 mg. cortisone per day for 1 month (maintenance dose)

P. A.

100 mg. cortisone per day, plus 75 mg. TCP per day IM, for 40 days to produce Cushing's state, and then 50 mg. cortisone per day for 1 month (maintenance dose)

R. N.

60 mg. corticotropin IV per day for 4 days produced left ventricular failure. Cortisone was then given in the following daily doses:

150 mg., for 5 days
200 mg., for 3 days
300 mg., for 4 days
400 mg., for 2 days—hypertension and dizziness; relapse 16 hr. after cortisone therapy was stopped

150 mg., for 8 days
200 mg., for 4 days
300 mg., for 30 days (maintenance dose)

B. R.

50 mg. corticotropin per day by continuous IV drip for 11 days, then 75 mg. corticotropin per day by continuous IV drip for 4 days, then 125 mg. corticotropin per day IM for 3 days, and finally 200 mg. per day IM for 11 days to produce Cushing's state

* Cortisone was administered orally to all patients in this group who received it.

† Testosterone cyclopentyl propionate.

If cortisone is used, it is advisable to give it orally. In crises as much as 100 mg. every hour[4b] may be given, if necessary, to control the clinical picture, following the same criteria followed in using corticotropin. In some patients a severe hypertensive state (occasionally with encephalopathy) develops when corticotropin is used. At this point, if the disease has not been adequately sup-

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4. (*a*) Haserick, J. R.: Plasma L. E. Test in Systemic Lupus Erythematosus: Study of 23 Patients with Positive L. E. Tests, J. A. M. A. **146:** 16-20 (May 5) 1951. (*b*) Haserick, J. R.; Corcoran, A. C., and Duston, H. P.: ACTH and Cortisone in Acute Crisis of Systemic Lupus Erythematosus, ibid. **146:** 643-645 (June 16) 1951.

5. (*a*) Soffer, L. J.; Levitt, M. F., and Baehr, G.: Use of Cortisone and Adrenocorticotropic Hormone in Acute Disseminated Lupus Erythematosus, Arch. Int. Med. **86:** 558-573 (Oct.) 1950. (*b*) Baehr, G., and Soffer, L. J.: Treatment of Disseminated Lupus Erythematosus with Cortisone and Adrenocorticotropin, Bull. New York Acad. Med. **26:** 229-234 (April) 1950.

pressed, it is advisable to change the treatment to cortisone, which has less mineralocorticoid activity. The same applies if the patient has hypertension with the disease. If malignant hypertension is present none of these hormones should be used.

Adjuvant Measures.—To combat the adverse effects of corticotropin and cortisone, additional therapeutic measures are necessary. In the absence of a salt-losing nephropathy, the patient should be placed on a 200 mg. sodium diet prior to and during the early phases of treatment. After the disease is controlled, it is possible to reduce the strictness of the dietary regimen gradually. The patient should be given 8 to 12 gm. per day of orally administered potassium chloride or citrate to counteract the hypokalemic effects of these hormones. Metabolic alkalosis due to hypopotassemia may occur despite this preventive therapy. In view of the increased ascorbic acid utilization during corticotropin therapy and the suggestive evidence of a hemorrhagic diathesis caused by an induced vitamin C deficiency, the patient should be given 500 mg. of ascorbic acid per day.[6]

In order to combat the catabolic effects of corticotropin and cortisone and possibly to inhibit the fundamental abnormality of systemic lupus erythematosus, we gave large doses of testosterone to our patients. As much as 500 mg. of testosterone propionate per day for as long as 35 days did not virilize 7 women with the active disease (see cases 1 and 4); however, after a remission was induced by corticotropin therapy it was possible to masculinize these patients with as high or smaller doses. During exacerbations of the disease, these patients excrete about 10% of the administered testosterone as 17-ketosteroids (case 4), as compared with the normal excretion of 40%.[6a] Further details of the peculiar metabolism of testosterone in this disease will be published in a subsequent report.[7]

Disease and Treatment Complications Having Similar Manifestations.—Differentiation of symptoms of systemic lupus erythematosus from complications of therapy is important, since these may have similar manifestations (cases 1, 2, 3, and 4). Haserick[8] has emphasized the frequency with which seizures occur in untreated patients. In Klemperer's series,[1] 6 of 20 patients had terminal convulsions. In our series, 13 of the 30 patients treated had grand mal seizures at some time in the course of treatment, and 11 of 16 patients who died in the hospital had seizures 48 to 72 hours before death. Autopsies were done on 15 of these, and in most the cause of death was cerebral angiitis due to systemic lupus erythematosis. (Since the advent of antibiotics, few of these patients have died as a result of secondary infections.) It is difficult to distinguish between convulsions caused by the disease and those resulting from hormone therapy. Fortunately, seizures caused by corticotropin do not usually occur during early treatment or before a marked Cushing's state has appeared. If the patient has had a recent exacerbation of the disease, is febrile and normotensive, has a positive tourniquet test owing to the active angiitis, and has no evidence of a recent considerable weight gain, the convulsions are most likely due to the disease itself (cases 1 and 2), and the hormone dose should be increased. The cause of psychoses can be determined in the same way, provided hypopotassemia can be ruled out. Convulsions caused by corticotropin occurred in the patient in case 3.

Periorbital edema is common in exacerbations of systemic lupus erythematosus and is usually accompanied by increased butterfly erythema. With clinical improvement during therapy, there is a rapid disappearance of this swelling. It is important not to confuse this change with the occurrence of an early Cushing's syndrome, in which there is swelling of the malar and submandibular areas.

Because of nephropathy due to lupus erythematosus, hypochloremia and hyponatremia may occur before or during corticotropin therapy. This may be corrected by diet supplementation. Hyperthyroidism occurred as a coincident disease in two of eight patients receiving massive doses of corticotropin and cortisone, contrary to the observations of most other workers.[8a] Boland and Headley[9] also noted the appearance of probable hyperthyroidism in 2 of their 42 patients with rheumatoid arthritis who were under cortisone therapy. We have seen no cases of induced hypothyroidism in our series. Myocarditis of lupus erythematosus responded poorly to therapy, but concurrent hyperthyroidism was successfully treated with I^{131} and propylthiouracil (case 5).

RESULTS OF TREATMENT

The pattern of clinical improvement in our patients closely follows that described by Soffer and his associates.[5] The fever abates in 24 to 48 hours, joint pains disappear in several days, and pleural effusions and cutaneous lesions subside in one to two weeks. Retinal changes, anemia, and cachexia gradually improve over a period of several weeks. In view of the severity of this disease, with the danger of sudden death at any time, we feel that these patients should receive vigorous treatment as soon as a diagnosis is made. Death may still occur prior to production of a Cushing's state, despite weeks of therapy with massive doses of intravenously administered corticotropin.

The circulating eosinophil count is usually low or zero in exacerbations of systemic lupus erythematosus, even in untreated patients, and consequently is of no value in following these patients. Determination of urinary 17-ketosteroid excretion is also of little use, because it may be elevated to a high level even though the patient is not improving clinically (case 5). Adrenal exhaustion does not occur with corticotropin stimulation in this disease. Failure to respond is usually due to inadequate dosage of corticotropin or extreme exacerbations of the disease itself.

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[6] Stefanini, M., and Rosenthal, M. C.: Hemorrhagic Diathesis with Ascorbic Acid Deficiency During Administration of Anterior Pituitary Corticotropic Hormone (ACTH), Proc. Soc. Exper. Biol. & Med. **75**: 806-808 (Dec.) 1950.

[6a] Engstrom, W. W., and Munson, P. L.: Studies on the Metabolism of Testosterone in Normal Women in Different Phases of the Menstrual Cycle, J. Clin. Endocrinol. **11**: 427-433 (April) 1951.

[7] Commons, R. R.; Dubois, E. L., and Starr, P.: Observations on the Effects of Massive Androgen Dosage in Acute Diseases, to be published.

[8] Haserick.[4a] Russell, P. W.; Haserick, J. R., and Zucker, E. M.: Epilepsy in Systemic Lupus Erythematosus: Effect of Cortisone and ACTH, A. M. A. Arch. Int. Med. **88**: 78-92 (July) 1951.

[8a] Wolfson, W. Q., and others: Corticogenic Hypothyroidism: Its Incidence, Clinical Significance and Management During Prolonged Treatment with ACTH or Cortisone, Proc. of the Second Clinical ACTH Conf. II, New York, The Blakiston Company, 1951, pp. 95-121.

[9] Boland, E. W., and Headley, N. E.: Management of Rheumatoid Arthritis with Smaller (Maintenance) Doses of Cortisone Acetate, J. A. M. A. **144**: 365-372 (Sept. 30) 1950.

L. E. cells disappeared completely within six weeks in seven patients, after induction of a remission. Six of the eight patients in the continuous treatment group had L. E. cells on admission; in five of these the cells disappeared during remission, and in the other one they have greatly diminished in number, some L. E. preparations from this patient being negative. The L. E. cells disappeared also in two patients who had only a brief course of therapy. The findings of these cells depends to a large extent on the duration of the search for them in the smear. At times thousands of white blood cells must be examined before a single L. E. cell is discovered. Unfortunately, the persistence of the L. E. factor was not studied in five earlier patients who had remissions. Usually there is a direct correlation between activity of the disease, especially fever, and the number of Hargraves cells present. L. E. cells have not been found in afebrile untreated patients. We have seen four patients who, at the time of death, had no lupus erythematosus phenomena demonstrable. One had had a highly positive smear a week before, and another had only rarely had an L. E. cell. Autopsy in each case confirmed the diagnosis of systemic lupus erythematosus.

In our experience, renal abnormalities, including proteinuria, sediment changes, and nitrogen retention, may return to normal during remissions, but can also do so spontaneously.[10] Soffer, Brunsting, and others have not found this to be true.[11] Of the 14 patients in whom clear-cut remissions were induced, 5 showed nephropathy; renal abnormalities cleared completely in all of these during remissions. None of these patients had had long-standing renal involvement. In two patients nephropathy developed during treatment, and in both it cleared with an elevated maintenance dose of cortisone. Of the 14 patients who had remissions, anemia was present in 12, and in 11 of these it was greatly improved by hormone therapy. The hemoglobin rose from levels as low as 4.5 gm. to 16 gm. per 100 cc. (Sahli method) within 4 weeks. Persistent anemia in absence of uremia is a sign of inadequate treatment. Patients with acquired hemolytic anemia due to systemic lupus erythematosus respond remarkably well to hormone therapy.[12] Of the 14 patients who had remissions, 11 had initial leukopenia; 10 of these showed normal white cell counts during remission. In all patients the sedimentation rate remained elevated in spite of apparent remission.

REPORT OF CASES

Case 1 (fig. 1).—C. P., an 18-year-old Mexican girl, was admitted to the Los Angeles County Hospital on Jan. 13, 1951, complaining of having had sore joints and fever since November, 1950. Generalized weakness, morning facial edema, and swollen, bleeding gums had developed more recently. On admission the patient's temperature was 101 F, pulse rate 100, and blood pressure 120/70 mm. Hg. She weighed 120 lb. (54.4 kg.) and was well developed and well nourished. Her gums were hypertrophic, and the gingival margins were injected. She had bilateral pleural effusion to the level of the eighth rib posteriorly. Significant results of laboratory tests were as follows: proteinuria (7.0 gm. per day); presence of nephropathic sediment in the urine; hemoglobin, 8.6 gm. per 100 cc.; white blood cell count 2,400; presence of L. E. cells in peripheral blood and bone marrow; and nonprotein nitrogen, 63 mg. per 100 cc.

Treatment with testosterone ester[13] (1 gm. per day for 14 days) produced no clinical or laboratory improvement. This was followed by treatment with testosterone propionate, 500 mg. per day, concomitantly with the corticotropin therapy described below, for the next 29 days, with no evidence of resultant virilization. Administration of 30 mg. of corticotropin daily for 4 days by continuous intravenous drip was ineffective.The intravenous dose was increased to 100 mg. of corticotropin daily, and the patient became afebrile in 24 hours. The nonprotein nitrogen level had risen to 92 mg. per 100 cc. at this time, despite adequate hydration. Three days later clinical improvement was evident. In two weeks facial edema and erythema had subsided, and pleural effusions had lessened. A few days later thrombophlebitis developed at the site of the intravenous cannula in the right leg. (Note in figure 1 the absence of febrile response.) Four days later continuous intravenous administration of corticotropin was changed to continuous intramuscular clysis, with maintenance of clinical improvement. At this time the nonprotein nitrogen level had dropped to 45 mg. per 100 cc. and the degree of proteinuria had lessened to 2 gm. per day, although the urinary sediment had not changed. During the heavy corticotropin dosage hyponatremia and hypochloremia developed, and the patient required a diet supplement of salt for correction. Against our advice, the patient was transferred to another hospital, and the corticotropin dose was decreased because of a rise in blood pressure to 142/106 mm. Hg with no other evidence of a Cushing's state. The next day the patient was febrile, and the butterfly rash reappeared. Four days later she had uncontrollable convulsions and died.

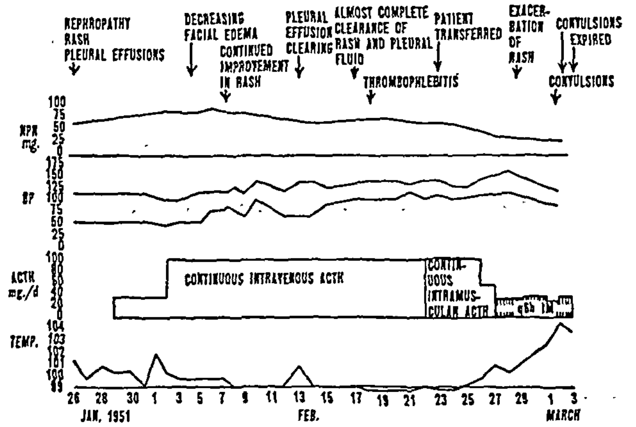

Fig. 1.—Clinical course of patient C. P. while receiving corticotropin therapy.

Case 2 (fig. 2).—M. Ar., a 19-year-old Mexican girl, was admitted to this hospital on July 10, 1950, complaining of a rash on the legs of nine months duration and arthralgia of several months duration. Physical examination revealed a moderately ill, febrile girl, with lesions of lupus erythematosus on the face, arms, and forearms. Laboratory examination showed the hemoglobin level to be 5 gm. per 100 cc., white blood cell count, 4,500, with a normal differential count, and the presence of L. E. cells.

On Aug. 4, 1950, the patient was placed on corticotropin therapy, 5 mg. administered intramuscularly every 12 hours. This dose was gradually increased during the next 10 days to 10 mg. every 6 hours, with only mild improvement in her general condition and production of a partial remission. On Nov. 16, 1950, after 3½ months on the above dosage schedule, the patient was fairly well; she had been afebrile for the preceding 2 weeks, during which her hemoglobin level had risen from 9.5 to 11 gm. per 100 cc. Two days later, while the patient was still receiving the same dosage, dry cough, arthralgia, and facial edema with butterfly erythema appeared, and her temperature went up to 105 F. At this point convulsions occurred, with an exacerbation of all skin lesions. Oral lesions occurred, with hemorrhage from the mucous membranes. Examination at this time showed her blood pressure to be 166/70 mm. Hg, coagulation time 5 minutes by Lee and White's method, and bleeding time 11 minutes. A tourniquet test was negative, the platelets were normal on smear, the prothrombin time was normal, and results of spinal fluid examination were negative. The patient was semicomatose and seemed moribund. The corticotropin dose was increased to 25 mg. every 6 hours, and within 48 hours there was rapid improvement in all symptoms. (The treatment schedule shown in table 4 was begun four weeks after this relapse, because the remission produced by corticotropin therapy up to that time had been only temporary and incomplete. We then began to feel that vigorous hormonal treatment with production of a Cushing's state, as described in this paper, was the choice method of therapy, and, therefore, treatment with the larger doses described in table 4 was started.) The patient had no subsequent convulsions during the next six months on corticotropin and cortisone therapy, although her blood pressure at times was as high as 240/120 mm. Hg.

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[12] Dubois, E. L.: Acquired Hemolytic Anemia as the Presenting Syndrome of Lupus Erythematosus Disseminatus, Am. J. Med. **12**: 197-204 (Feb.) 1952.

[13] Testosterone beta-diethylaminoethyl carbonate hydrochloride was supplied by Ciba Pharmaceutical Products, Inc.

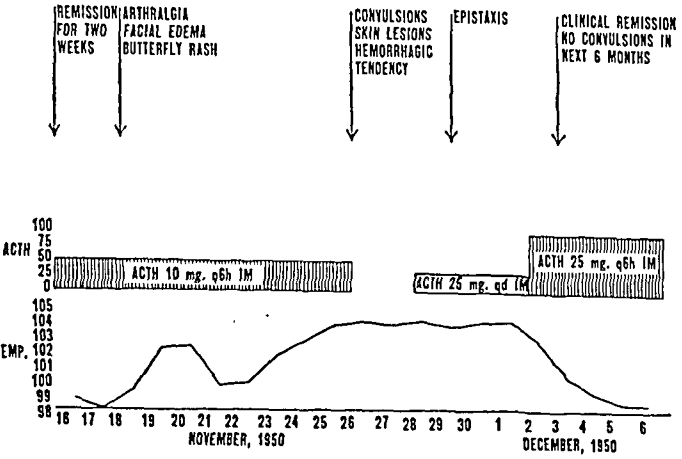

Fig. 2.—Clinical course of patient M. A. while receiving continuous treatment with corticotropin. The convulsions were due to active systemic lupus erythematosus. In the subsequent six months during which no convulsions occurred, the patient received corticotropin and cortisone therapy as indicated in table 4.

Case 3 (fig. 3).—M. A., an 8-year-old Mexican girl, was admitted to this hospital on May 24, 1950. (Hematological details of this case are reported elsewhere.[12]) She had been well until December, 1949, when skin pallor, fever, anorexia, generalized adenopathy, weakness, and arthralgia appeared. Physical examination revealed hepatomegaly and splenomegaly. A diagnosis of acquired hemolytic anemia was made at that time, all the classic changes being demonstrable. In March, 1950, a splenectomy was performed, and microscopic studies of the spleen showed the characteristic lupus erythematosus changes. In July, 1950, a butterfly rash appeared, which lasted for a few weeks. The patient's blood continued to hemolyze until corticotropin therapy was instituted. With development of a Cushing's state, her hemoglobin level rose from 8.5 to 15 gm. per 100 cc., without transfusion. Results of urinalyses done at various times were normal. The patient has been receiving continuous corticotropin therapy for a total of eight months and has shown no evidence of developing resistance or antibodies to the drug.

Prior to her convulsive episode, the patient had been maintained in full remission for 5.5 weeks on 15 mg. of corticotropin administered intramuscularly every six hours, with her blood pressure averaging 130/80 mm. Hg. Note in figure 3 that from Feb. 5 through 9, she continued afebrile, and her body weight rose from 58.25 lb. (26.4 kg.) to 61 lb. (27.7 kg.), although she was on a 200 mg. sodium diet. At 6 p. m. on Feb. 9, she complained of severe headache 15 minutes after an injection of corticotropin. Her blood pressure at this time was 220/140 mm. Hg. No corticotropin was given for the next five days. With sedation and meralluride (mercuhydrin®) injection therapy her blood pressure fell during the night to 130/90 mm. Hg, and the next morning at 8 o'clock she began having generalized convulsions. Note in figure 3 that the fever appeared after the onset of convulsions. The patient was critically ill for 12 hours and almost died. She stopped breathing, and positive pressure oxygen and artificial respiration were given. She had never previously had seizures, nor did she have any during the subsequent six months. Four days later, a test dose of 10 mg. of corticotropin was given. The control blood pressure was 120/75 mm. Hg; within 15 minutes it rose to 145/104 mm. Hg, and within 40 minutes it dropped to 125/90 mm. Hg. On February 17 another test injection was given, which had a greater pressor effect (fig. 3). Nevertheless, the patient was again started on corticotropin therapy (10 mg. every 8 hours), because relapse was feared. There were no subsequent ill effects during the following six months. (The same doses of the same brand and lot number of corticotropin given this patient produced no pressor response in normal persons.)

Case 4.—R. S., a 38-year-old Mexican housewife, was admitted to this hospital on April 19, 1950. Since May, 1949, she had had persistent joint pain, chest pain, fever, and erythematous skin rash.

On admission she weighed 127 lb. (57.6 kg.), had a temperature of 100 F., a pulse rate of 100, and blood pressure of 133/90 mm. Hg. She was well developed and well nourished and was in no severe distress. She had typical lupus erythematosus skin lesions on the face and scalp, bilateral pleural effusion, and moderate redness, swelling, and tenderness in most of the major and minor joints. Laboratory tests showed 9.5 gm. of hemoglobin per 100 cc., a white blood cell count of 3,100, the presence of L. E. cells in peripheral blood and bone marrow, and 30 mg. of nonprotein nitrogen per 100 cc.; results of urinalysis were normal, and urinary 17-ketosteroid excretion was 1.8 mg. per day.

Beginning in April, 1950, the patient was given 10 mg. of corticotropin intramuscularly every 6 hours for several weeks. This produced no major clinical change. Corticotropin therapy was started again on Oct. 12, 1950, with the same dose. On Oct. 25, 1950, the patient began to have convulsions, which were controlled by increasing the corticotropin dose to 25 mg. every 6 hours. Because of continued fever, the dose was increased to 50 mg. every 6 hours; this was without effect, despite an increase in 17-ketosteroid excretion from 1.1 to 11.8 mg. for 24 hours. A seven day course of cortisone was not helpful. With the use of testosterone ester,[13] followed by testosterone propionate, in massive dosage (1,000 and 500 mg. per day, respectively), there was a temporary remission of symptoms, with subsequent exacerbation. We feel that it is important to note that no signs of virilization appeared with these large doses of testosterone, although this therapy was continued for five weeks. The patient excreted only 47.7 mg. of 17-ketosteroids per 24 hour period

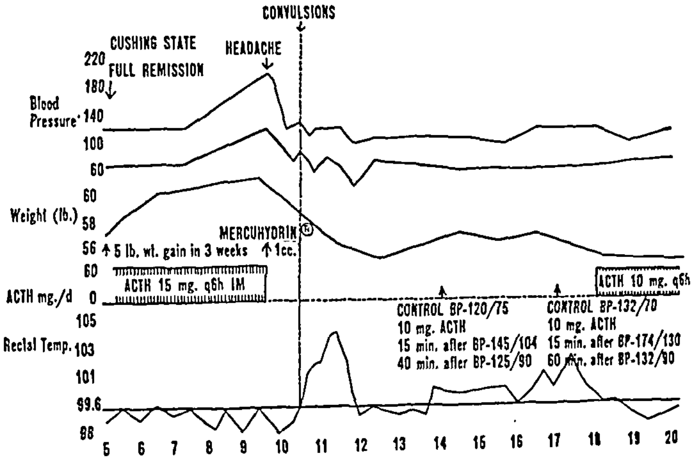

Fig. 3.—Clinical course of patient M. A. during crisis period that occurred after corticotropin therapy had been instituted. The convulsions were due to corticotropin. Note the pressor effect of corticotropin at the sub-Cushing level.

while receiving 500 mg. per day of testosterone propionate. The fact that approximately 10%, rather than 40%,[6a] of administered testosterone was present as 17-ketosteroids in the urine suggests abnormal metabolism or increased utilization of testosterone. Continuous intramuscular administration of corticotropin in increasing doses produced slight effect on an exacerbation, during which the patient died.

Case 5.—R. N., a 30-year-old Japanese housewife, weighing 88 lb. (39.9 kg.) was admitted to this hospital on May 2, 1951, complaining of aching in her joints of 6 months' duration. The illness had begun in December, 1950, when she noted aching in her fingers while typing. In February, 1951, generalized malaise appeared, along with arthralgia in both knees and pleurisy. In April, 1951, the patient was digitalized because of myocarditis and early congestive heart failure. Her history revealed that, in 1942, her thyroid had been found to be enlarged, and her basal metabolic rate was slightly elevated; at that time thyroidectomy was suggested but was not done. In 1946, after a careful thyroid study, it was decided that she needed no specific therapy. Her brother, a physician, had noted that during the past eight years, her pulse rate was often in the range of 100 to 115, but that she had showed no evidence of hyperthyroidism other than goiter and occasional tachycardia.

On admission, she had a temperature of 100.2 F, a pulse rate of 100, a respiratory rate of 20, and blood pressure of 120/80 mm. Hg. She was an apprehensive, slightly undernourished, and acutely and chronically ill woman. A slight diffuse enlargement of the thyroid was evident. A few moist rales were present at both posterior lung bases. Cardiac examination revealed the point of maximal impulse to be in the sixth intercostal space at the anterior axillary line. The heart tones were normal. There was a grade 2 blowing apical systolic murmur that was poorly transmitted. Laboratory studies on admission revealed a red blood cell count of 3,950,000, a hemoglobin level of 11 gm. per 100 cc., and a white blood cell count of 3,800; the peripheral blood and bone marrow showed many L.E. cells; and the serum protein bound iodine content was 8 μg. per 100 cc. Urinalysis showed a 2+ amount of albumin, 10 red and 5 white blood cells per high power field, and one granular and one hyaline cast.

On May 7, 1951, the patient was placed on continuous intravenously administered corticotropin, 60 mg. per day, and within four days her blood pressure rose to 190/90 mm. Hg, and acute left ventricular failure developed. At this point corticotropin therapy was stopped and cortisone therapy was started (table 4). On May 15, the patient became voraciously hungry. On May 27, marked nervousness and tremor of the hands appeared, along with palpitation and a heart rate of 140. By June 11, a definite Cushing's state was present, with clinical evidence of hyperthyroidism, which had become much more apparent during hormone therapy. The significant results of laboratory tests at this time were as follows: basal metabolic rate, +27 and +44; serum protein bound iodine, 7.7 and 8.0 μg per 100 cc.; 24-hour radioactive iodine uptake, 122% and 58%; and serum cholesterol, 174 mg. per 100 cc. The hyperthyroidism was controlled with propylthiouracil and Lugol's solution, while a state below the Cushing level was maintained with cortisone therapy. At the time of appearance of the Cushingoid state, the clinical and laboratory evidences of systemic lupus erythematosus disappeared, including temporarily the L. E. cells. With treatment the patient's weight increased from 88 to 122 lb. (39.9 to 55.3 kg.).

SUMMARY

Spontaneous remissions in systemic lupus erythematosus occur in about 20% of untreated patients. Remissions can be induced by the use of corticotropin (ACTH) and cortisone. The dosage required to do this varies with the severity of the disease, and in the far advanced cases it may be impossible to bring about remissions, even with the use of large amounts of these hormones. If a "Cushingoid" appearance is obtained, a simultaneous remission usually occurs. To date, no patient in whom a Cushing's state has been induced and maintained has died. The remission must be maintained on small doses of corticotropin or cortisone. Differentiation of symptoms of systemic lupus erythematosus from complications of therapy is important; convulsions, psychoses, and edema from either cause may have similar manifestations. Hypersensitivity to the immediate pressor effects of corticotropin was observed in all patients at the Cushingoid level.

Female patients with active systemic lupus erythematosus were given massive doses of testosterone esters for several weeks, with no resulting virilization until a remission was induced. Clinical and laboratory evidence of hyperthyroidism occurred in two of eight patients treated with massive doses of both corticotropin and cortisone.

There is no definite evidence that treatment with corticotropin or cortisone will prolong life expectancy; however, there is no question that these agents are, at present, the most effective weapons available for the treatment of systemic lupus erythematosus.

ADDENDUM

An additional 15 patients have been treated in accordance with the regimen suggested, bringing the total treated to 45. In only 2 of these 15 was it impossible to produce a remission or Cushing's state after intravenous administration of corticotropin in doses up to 600 mg. per day. One patient has been brought out of crises by treatment with 2,400 mg. of cortisone per day for 3 days. There are now 21 patients in the continuous treatment group, the patient with the longest treatment period having received hormone therapy for 18 months. Duration of the disease for this group as of June 1, 1952, is a median of 30.5 months, an arithmetic mean of 36.1 months, and a geometric mean of 27.3 months, which is an improvement over our control series. No ill effects have been noted from long term cortisone therapy, such as osteoporosis, psychosis, or perforated ulcers; however, three patients have had spontaneous thrombophlebitis.

Advanced renal damage of the nephrotic type appeared in five patients in the total series. The early mild nephropathies clear with therapy. Two patients in whom mild renal damage developed while they were receiving maintenance doses of cortisone and in whom it cleared temporarily with an elevation of the maintenance dose had a recurrence of severer renal damage several months later. This severe nephropathy was refractory to doses of cortisone high enough to produce hypertensive encephalopathy and a marked Cushing's state. Both patients subsequently died; in one pulmonary tuberculosis developed after 13 months of cortisone therapy, and the other had a cerebral hemorrhage secondary to hypertension from the renal lesion after 15 months of therapy. These patients and most of the others would have died much sooner or would have spent their last months in the hospital without the aid of hormone therapy. Of the other three patients who had severe renal lesions, in one (F. B.) it developed 14 months after a short course of corticotropin was given, in the second it developed before therapy of any type was given, and in the third it developed during maintenance therapy. Increasing the cortisone dose in each case to the end point mentioned above did not affect the kidney damage. Three of the 5 patients were given nitrogen mustard intravenously up to a total

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[illegible]
C. B. C. [illegible]

of 60 mg. over a 6 month period, without effect on the nephropathy. Three of these patients also received testosterone and cortisone to the point at which virilization occurred, with marked clitoral enlargement, with no amelioration of the kidney damage. One of these also had severe lupus myocarditis (Libman-Sacks syndrome), which was not affected by the above treatment. All the other patients are alive and are leading relatively normal lives.

Systemic lupus erythematosus, which was hitherto thought to be rare, is being diagnosed as frequently as is classic pernicious anemia at this hospital. The incidence of spontaneous remissions is about 20 to 40%, and it is suggested that patients with milder cases be observed during a rest period of several weeks prior to starting treatment, because the frequency of occurrence of spontaneous remissions seems to be lowered by therapy. Of the 21 patients receiving maintenance doses of cortisone, 19 have received them for over 2 months, and of these only 2 have been able to discontinue treatment without relapses occurring within 3 months — one after 11 months of therapy and the other after 3 months.

We feel strongly that the usual cause of failure of response of patients with systemic lupus erythematosus and other diseases that usually respond to these hormones is inadequate dosage. The obvious clinical appearance of a Cushing's state rather than stereotyped dosage schedules should be used as an end point to determine the effectiveness of therapy.

1200 N. State St. (Dr. Dubois).

CORTICOTROPIN AND CORTISONE IN ACUTE DISSEMINATED LUPUS ERYTHEMATOSUS

RESULTS OF LONG-TERM USE

Louis J. Soffer, M.D.
and
Richard Bader, M.D., New York

This report is concerned with the results of a prolonged study of a group of 18 patients (12 female and 6 male) with acute disseminated lupus erythematosus treated with corticotropin (ACTH) and cortisone and followed for 3 to 20 months thereafter. In several previous papers[1] we have reported on the prompt response of the fever, rash, arthritis, pleuritis, and pericarditis to treatment with these agents, in contrast to the persistence of L. E. cells and renal damage.[1c, d] Since these earlier reports, further studies have provided an opportunity to evaluate the hazards of therapy in patients with varying degrees of organ involvement and have served to clarify those clinical features that are of prognostic importance.

The major clinical manifestations present in this group are listed in table 1. The ratio of females to males was 2:1, the incidence in males being much greater[2] than has been previously reported.[3] This apparent increase in the number of cases reported in males is probably the result of newer diagnostic criteria, including the use of the L. E. cell phenomenon and the lesser emphasis placed on the presence of the facial rash. The majority of patients were between the ages of 10 and 40 years (six between 10 and 19, four between 20 and 29, and six between 30 and 39), but the occurrence of two cases in the 50 to 59 year group points up the importance of making L. E. cell preparations in patients of this age, particularly in those who are suspected of having rheumatoid arthritis.

The long list of clinical manifestations emphasizes the protean character of this illness. Fever was a universal finding in all patients. Arthritis was not always present on admission but almost invariably occurred at some time during the course of the disease. The characteristic "butterfly" facial eruption was present in 11 of the 18 patients. The mucous membrane lesions that occurred in half the patients were evident on the buccal or gingival mucous membranes and consisted of flat, shallow ulcerations surrounded by an erythematous margin. Renal damage was common. All patients had microscopic hematuria of some degree. Fourteen patients had hyaline and granular casts in the urine. Persistent elevation of the urea nitrogen level of the blood above 25 mg. per 100 cc. was present in five patients, in two of whom a frank nephrotic syndrome developed.

Anemia, leukopenia, and thrombocytopenia were frequently observed. Studies of the sternal bone marrow in the 18 patients revealed variable findings. Bone marrow cellularity was increased in four patients and decreased in an equal number. Megakaryocytes were increased in one patient and decreased in two patients. Erythroid activity was decreased in four patients and increased in one. An increased percentage of myeloid elements was found in four. Acquired hemolytic anemia, which occasionally occurs in patients with acute disseminated lupus erythematosus, was not present in this group. Recently three such cases were reported by Dubois, who found a positive Coombs' reaction in all three.[4]

From the Endocrine Research Laboratory and Clinic and the Medical Services of the Mount Sinai Hospital.

[1] (*a*) Baehr, G., and Soffer, L. J.: Treatment of Disseminated Lupus Erythematosus with Cortisone and Adrenocorticotropin, Bull. New York Acad. Med. **26**: 229, 1950. (*b*) Baehr, G., and others: The Influence of *Cortisone and Adrenocorticotropin in Disseminated Lupus Erythematosus,* Tr. A. Am. Physicians **63**: 89, 1950. (*c*) Soffer, L. J.; Levitt, N. F., and Baehr, G.: Use of Cortisone and Adrenocorticotropic Hormone in Acute Disseminated Lupus Erythematosus, Arch. Int. Med. **86**: 558 (Oct.) 1950. (*d*) Soffer, L. J.; Baehr, G.; Levitt, M. F., and Bader, M.: The Use of Adrenocorticotropin and Cortisone in Acute Disseminated Lupus Erythematosus, Proceedings of the Second Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1951, vol. 2, p. 680.

[2] Pastor, B. H.; Sloane, N. G., and Goldburgh, H. L.: Disseminated Lupus Erythematosus in the Male: Report of 5 Cases, New England J. Med. **244**: 81, 1951.

[3] Baehr, G.; Klemperer, P., and Shifrin, A.: Diffuse Disease of Peripheral Circulation Usually Associated with Lupus Erythematosus and Endocarditis, Tr. A. Am. Physicians **50**: 139, 1935.

[4] Dubois, E. L.: Acquired Hemolytic Anemia as the Presenting Syndrome in Lupus Erythematosus Disseminatus, Am. J. Med. **12**: 197, 1952.

The L. E. cell[5] was demonstrated in all patients in this group in both the peripheral blood and the sternal marrow. The characteristic cell is a polymorphonuclear leukocyte, containing a large, round homogeneous inclusion body, which is stained by basic dyes and is Feulgen-positive. It can be demonstrated in the peripheral blood and sternal marrow of most patients with acute disseminated lupus erythematosus. In a fairly large group of patients with this disease, not all of whom are included in the present series, L. E. cells were found in 96%.[5c] Of the cases in which postmortem examination failed to confirm the antemortem diagnosis of lupus erythematosus, the typical cells were found during life in only one. The inclusion body of the L. E. cell consists of altered nuclear material derived from polymorphonuclear leukocytes and lymphocytes.[5c] It contains partially depolymerized desoxyribosenucleic acid and is identical optically and chemically with the hematoxylin-staining body described as pathognomonic of lupus erythematosus.[6] In all instances in which the L. E. cell was demonstrated in the bone marrow, it could be found with equal facility in the peripheral blood.

TREATMENT

All patients in this group were hospitalized for long initial periods, varying from three to nine months, in order that we might evaluate closely drugs, dosage, and complications. A careful and complete investigation, including several blood cultures, was conducted in each case. A preliminary routine trial period of therapy with an antibiotic was instituted prior to treatment with cortisone or corticotropin. All patients were given a 200-mg. (8.5-mEq.) sodium diet obtained from a special diet kitchen. The weight and blood pressure were recorded daily. Mercurial diuretics were employed in those patients in whom edema developed as a result of therapy; when congestive failure was a factor, digitalis was also used. For the correction of the hypochloremic alkalosis and hypopotassemia encountered during treatment, potassium chloride was administered orally, 2 to 6 gm. a day.

The initial daily dose of corticotropin was 100 mg., given intramuscularly in divided doses, and that of cortisone 200 to 300 mg., given either by mouth or parenterally. The daily amount of either drug was then gradually reduced unless there was a recrudescence of symptoms. Ultimately most patients were managed with a daily maintenance dose of 20 to 50 mg. of corticotropin or 50 to 100 mg. of cortisone. In some instances it was eventually possible to discontinue therapy entirely for variable periods of time, depending on the duration of the remission.

On discharge from the wards the patients were followed in a special therapy clinic under the supervision of the same group of investigators. The patients were seen weekly or biweekly, and parenteral treatment with either agent was self-administered according to the time schedule instituted on the ward service. Later most of the patients received cortisone orally every six to eight hours. No special therapeutic effect was noted from the use of corticotropin or cortisone that recommended use of one agent in preference to the other. The convenience of oral administration of cortisone determined its more widespread use in the group. In general two to two and a half times as much cortisone as corticotropin was necessary to obtain a similar therapeutic effect.

During the hospital stay weekly determinations were made of the blood urea nitrogen, fasting blood sugar, serum chloride, serum carbon dioxide content, serum potassium, serum sodium, serum albumin and globulin, serum cholesterol and esters, and erythrocyte sedimentation rate. Electrocardiographic tracings and x-ray studies of the chest were made at weekly intervals at the beginning and every two weeks thereafter unless specifically indicated. Electroencephalographic studies were performed in 11 cases. Electrophoretic patterns were determined serially in 5 cases and repeated serum hexosamine determinations in 11. Similar studies were conducted in the outpatient department at monthly intervals.

Table 1.—*Clinical Manifestations in Eighteen Patients with Acute Disseminated Lupus Erythematosus*

Signs and Symptoms	No. of Patients
Fever	18
Arthritis	18
L. E. cells	18
Renal damage	
Microscopic hematuria	18
Microscopic hematuria and formed elements	14
Persistent azotemia	5
Elevated sedimentation rate	16
Anemia	16
Weight loss	14
Leukopenia	12
Lymphadenopathy	12
Rash	
Face	11
General	11
Thrombocytopenia	10
Mucous membrane lesions	9
Pericarditis and pericardial effusion	9
Pleurisy and pleural effusion	9
Organic mental syndrome	7
Fundal changes	7
Electroencephalographic abnormalities	6
Petechiae or purpura	6
Cachexia	5
Palpable spleen	4
Abdominal pain	4
Raynaud's phenomenon	3
Nephrotic syndrome	2

EFFECTS OF THERAPY

The effects of therapy on the specific manifestations of the disease are listed in table 2. In general, there was a rather prompt and marked improvement in the sense of well-being of the patients, associated with an increase in appetite and a decrease in irritability and depression. These changes were often evident within 24 hours after the beginning of corticotropin or oral cortisone therapy and within three to four days with intramuscularly administered cortisone. Within this period the temperature returned to normal levels unless some associated intercurrent infection was present. The serous membrane involvement responded rapidly. Joint pain and pleural and pericardial pain disappeared within one to three days and pleural effusions within one to three weeks. Abdominal pain, a common manifestation of the disease and generally associated with perihepatitis and perisplenitis, subsided within one to three days. This effect of therapy is probably related to subsidence of the inflammatory process, since neither corticotropin nor cortisone exercises any analgesic effects.[7]

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[5] (*a*) Hargraves, M. M.; Richmond, H., and Morton, R. J.: Presentation of 2 Bone Marrow Elements: "Tart" Cell and "L. E." Cell, Proc. Staff Meet., Mayo Clin. **23:** 25, 1948. (*b*) Haserick, J. R.: Plasma L. E. Test in Systemic Lupus Erythematosus: Study of 23 Patients with Positive L. E. Tests, J. A. M. A. **146:** 16 (May 5) 1951. (*c*) Lee, S. L.; Michael, S. R., and Vural, I. L.: The L. E. (Lupus Erythematosus) Cell: Clinical and Chemical Studies, Am J. Med. **10:** 446, 1951.

[6] Klemperer, P., and others: Cytochemical Changes in Acute Disseminated Lupus Erythematosus, Arch. Path. **49:** 503 (May) 1950.

TABLE 2.—*Response to Therapy*

Signs and Symptoms	No. of Patients	Results
Fever	18	Disappeared in 1-2 days with corticotropin or oral cortisone therapy, in 3-5 days with intramuscular cortisone therapy
Arthritis	18	Disappeared within 1 week
Renal damage		
Microscopic hematuria	18	Persisted
Formed elements	14	Persisted
Azotemia	10	Persisted in 5, returned to normal in 5
L. E. cells	18	Persisted
Elevated sedimentation rate	16	Increased in 6, decreased in 5, no change in 7
Anemia	16	Improved in 5, unaltered in 8, worse in 3
Leukopenia	12	Increase in WBC in 9, no change in 5, reduction in 4
Rash	11	Faded slowly during first 2-4 weeks of therapy
Thrombocytopenia	10	Improved in 5
Mucous membrane involvement	9	Cleared within 7-14 days
Pericarditis	9	Effusions cleared in 1-3 weeks; pain cleared in 1-3 days
Pleurisy	9	Effusions cleared in 1-2 weeks
Organic mental syndrome	7	Cleared in 1 week
Retinal abnormalities	7	Cleared slowly
Petechiae or purpura	6	Disappeared in 1 week
Cachexia	5	Improved slowly
Abdominal pain	4	Subsided in 1-3 days
Raynaud's phenomenon	3	Subsided in 3-4 days

The skin lesions cleared slowly, usually within two to four weeks. When telangiectasia was a component of the erythematous eruption, the former persisted although the latter disappeared. In several patients the bright erythematous eruption changed to a spotty brownish pigmentation, which then slowly disappeared. The mucous membrane lesions similarly eventually healed in the nine patients in whom they were present.

In three patients Raynaud's phenomenon was a prominent feature of the disease. This promptly disappeared with treatment, but just as promptly recurred when the dosage of the drugs was reduced to inadequate levels.

The organic mental syndrome associated with the systemic toxicity and febrile state cleared as soon as the general febrile state improved. Before treatment was started these patients were disoriented as to time and place; the stream of speech was incoherent, content of thought illogical, judgment impaired, and ability to calculate poor. This mental pattern cleared promptly with therapy.

In 6 of 13 cases the electroencephalographic pattern was abnormal prior to therapy, being characterized by slow, three to six cycles per second, activity. In three patients the pattern reverted to normal during treatment. It is our feeling that the presence of an organic mental syndrome in this illness does not constitute a contraindication to therapy. The importance of convulsions as a complication will be discussed later.

Retinal lesions, observed in seven cases, were characterized by perivascular exudates, hemorrhages, and segmentation of the blood vessels. These slowly cleared in every instance. In patients with severe relapse, preterminal or uremic retinal lesions reappeared. The sedimentation rate was elevated in 16 patients, and its response to treatment was variable. There was an increase in the sedimentation rate in six, a decrease in five, and no change in seven patients. Since corticotropin and cortisone therapy may exert a nonspecific effect on the sedimentation rate,[8] its value as a clinical index when these agents are employed is questionable.

The effects on the blood are listed in table 3. Anemia was present in 16 of the 18 patients. Of these, five improved slowly, eight showed no significant change, and in three the anemia became more marked. Two of these three succumbed to progressive renal failure with azotemia. Leukopenia was present in 12 patients. With therapy, nine showed an increase in the total white blood cell count, in five no change occurred, and in four there was a further progressive fall. The platelet count, which was less than 150,000 in 10 patients, increased in half of this group.

TABLE 3.—*Hematological Changes with Therapy*

Case No.	Hemoglobin, Gm./100 Cc.		Red Blood Cells, Millions/ Cu. Mm.		White Blood Cells/ Cu. Mm.	
	Before Therapy	After Therapy	Before Therapy	After Therapy	Before Therapy	After Therapy
1	8.7	12.0	3.0	3.8	5,600	9,600
2	8.0	9.5	3.0	3.0	3,800	9,600
3	9.0	6.0	3.4	2.0	3,600	4,300
4	11.5	12.0	3.7	4.0	6-7,000	6,500
5	8.8	7.0	3.0	2.5	4,600	1,850
6	8.8	9.0	2.7	2.7	2,800	12,000
7	8.0	9.5	3.0	3.5	7,200	8,850
8	11.5	9.5	3.8	3.5	9,400	3,500
9	14.0	12.5	4.4	4.2	3,500	7,500
10	11.0	7.0	3.3	2.9	5,000	3,000
11	9.0	11.5	3.0	3.5	4,500	4,500
12	10.0	13.0	3.85	4.0	4,200	5,600
13	6.0	13.5	2.16	4.1	5,200	9,600
14	14.0	14.5	5.5	5.3	5,400	5,200
15	7.8	12.0	2.5	4.1	3,500	5,400
16	9.0	9.0	3.3	3.3	1,900	2,000
17	11.0	10.5	3.7	3.3	7,000	10,000
18	10.0	12.5	3.5	4.6	7,000	6,000

The plasma protein changes seen in patients with acute disseminated lupus are characterized by a decrease in the serum albumin fraction and an elevation in the serum alpha$_2$ and gamma globulin.[9] The total serum proteins may or may not be decreased. In the 18 (table 4) patients hyperglobulinemia was present in 16 and hypoalbuminemia in 15. The total protein values were within the normal range in all. With therapy there was an increase in the serum albumin fraction in 10, a decrease in

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[7] Groekest, A. W.; Baillancourt, deG.; Gottsegen, R., and Ragan, C.: Lack of an Analgesic Effect of Cortisone and ACTH, J. Clin. Investigation **30**: 644, 1951.

[8] Robinson, W. D.; Wolfson, W. Q., and Duff, I. F.: The Significance of Sedimentation Rate Changes During ACTH Therapy, Proceedings of the Second Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1951, vol. 2, p. 549.

[9] (*a*) Coburn, A. F., and Moore, D. H.: The Plasma Proteins in Disseminated Lupus Erythematosus, Bull. Johns Hopkins Hosp. **73**: 196, 1943. (*b*) Reiner, M.: Effect of Cortisone and Adrenocorticotropin Therapy on Serum Proteins in Disseminated Lupus Erythematosus, Proc. Soc. Exper. Biol. & Med. **74**: 529, 1950.

4, and no change in 4 patients. There was a reduction in the serum globulin in 11 patients, an increase in 4, and no change in 3. Serial electrophoretic patterns were obtained in five patients (table 5). Treatment was followed by an increase in the serum albumin, a fall in the serum gamma globulin, and no change in the serum alpha$_2$ globulin.[9b] It has been suggested that the duration and activity of the disease process is roughly correlated with the degree of elevation of the gamma globulin fraction and the depression of complement activity. During treatment with corticotropin the complement titer of the blood tends to rise and the gamma globulin level to fall.[10]

TABLE 4.—*Plasma Protein Changes with Therapy*

	Plasma Proteins (Gm./100 Cc.)					
	Before Therapy			After Therapy		
Case No.	Albumin	Globulin	Total Protein	Albumin	Globulin	Total Protein
1	2.2	4.3	6.5	4.0	3.3	7.3
2	2.5	5.0	7.5	3.0	3.5	...
3	2.6	3.7	6.3	3.0	2.9	5.9
4	2.9	3.5	6.4	3.3	3.0	6.3
5	3.3	4.7	8.0	2.4	3.5	5.9
6	3.1	5.0	8.1	4.3	2.8	7.1
7	3.6	3.5	7.1	4.2	2.5	6.7
8	3.2	3.5	6.7	2.3	3.9	6.2
9	3.3	3.5	6.8	3.5	2.6	6.1
10	4.4	2.2	6.6	2.0	3.0	5.0
11	3.5	4.0	7.5	3.5	2.5	...
12	2.7	5.1	7.8	3.9	5.0	8.9
13	1.7	6.0	7.7	3.5	3.7	7.2
14	3.4	4.0	7.4	3.7	3.5	7.2
15	2.5	3.5	6.0	4.4	3.7	8.1
16	2.1	4.0	6.1	1.8	4.4	6.2
17	3.0	3.3	6.3	2.2	3.5	6.8
18	2.4	4.5	6.9	3.5	4.9	8.4

Two major clinical manifestations persist during both drug-induced and spontaneous remissions. These are the L. E. cell phenomenon and the renal lesions. The L. E. cells may disappear temporarily during remissions but can always be demonstrated at some time or another. One patient, not included in this series, who had had a spontaneous remission for five years consistently, still showed L. E. cells in peripheral blood and bone marrow.

The renal injury observed in patients with acute disseminated lupus is persistent and is of grave prognostic significance. Of the 18 patients studied, all had microscopic hematuria. Formed elements (hyaline and granular casts) were present in 14. An elevation of the blood urea nitrogen level to over 25 mg. per 100 cc. was present in 10 patients. In five instances the blood urea nitrogen returned to normal levels rapidly, coincident with alleviation of the fever and improved hydration. Five patients had persistent azotemia despite vigorous therapy. Of these, three died, two with a blood urea nitrogen level exceeding 100 mg. per 100 cc. and one with a level exceeding 50 mg. per 100 cc. Postmortem studies were conducted on two of these three patients. In one the kidneys were large and pale, such as is seen in patients with subacute nephritis with a nephrotic syndrome. The characteristic renal lesions of acute disseminated lupus erythematosus were observed microscopically in both patients. Of 13 patients without persistent azotemia but with microscopic hematuria, 3 died of causes unrelated to renal insufficiency. It should be noted, however, that an initial elevation of the blood urea nitrogen level is not necessarily a reliable index of renal damage, since in half the patients a rapid return to normal levels occurred with alleviation of the fever and dehydration. The prognostic importance of persistent renal abnormalities with therapy has been emphasized in previous reports,[1c, d] and short-term studies of renal function have failed to reveal any improvement with treatment.[11]

Of interest is the effect of therapy on the serum hexosamine levels.[12] It has been known for a considerable time that a material containing hyaluronic acid and probably chondroitin sulfate is present as a metachromatically staining amorphous ground substance, which swells tissues and separates connective tissue fibers in patients with disseminated lupus erythematosus. Since hexosamine constitutes the greater part of the mucopolysaccharide molecule and is present in the serum as bound hexosamine (glucosamine and galactosamine), the levels of this fraction were studied in the patients with collagen diseases. In a group of 19 patients with disseminated lupus erythematosus, 17 were found to have elevated serum hexosamine levels. Such increases are by no means limited to patients with this disease but are frequently encountered in those with acute disorders, e. g., coronary thrombosis and severe acute infections, as well as in patients with chronic illnesses, such as Hodgkin's disease, leukemia, periarteritis nodosa, and carcinomatosis. In 11 patients of our group with acute disseminated lupus erythematosus receiving treatment with corticotropin and cortisone the serum hexosamine levels were followed serially for many weeks. In all of them the serum hexosamine levels were consistently lowered during periods of spontaneous remission and clinically effective therapy.

COMPLICATIONS OF THERAPY

A summary of the complications is listed in tables 6 and 7. It will be noted that hypertension occurred at some time during treatment in nine patients. Prior to therapy all but one of the patients had normal blood pressure readings. The one patient (case 6) had had a sympathectomy for hypertension six years before the present admission to the hospital. Normal blood pressure, and even hypotension, is a characteristic finding in patients

TABLE 5.—*Electrophoretic Patterns of Serum Proteins in Normal Subjects and in Patients with Disseminated Lupus Erythematosus*

		Relative Percentage of Total Proteins				
			Globulins			
Subjects (No.)	Total Protein, Gm./100 Cc.	Albumin	Alpha	Alpha$_2$	Beta	Gamma
Normal subjects (2)....	7.2	56.8	7.2	8.7	12.8	14.4
Patients with untreated disseminated lupus erythematosus (20)......	6.9	33.3	7.3	15.4	12.8	31.1
Patients with disseminated lupus erythematosus before therapy (5)	7.0	34.7	8.1	12.5	15.1	29.6
Patients with disseminated lupus erythematosus after therapy (5)	6.1	44.0	7.2	12.7	16.6	19.5

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10. Vaughan, J. H.; Bayles, T. B., and Favour, C. B.: The Response of Serum Gamma Globulin Level and Complement Titer to Adrenocorticotropic Hormone (ACTH) Therapy in Lupus Erythematosus Disseminatus, J. Lab. & Clin. Med. **37**: 698, 1951.

11. Heller, B. I.; Jacobsen, W. E., and Hammarsten, J. F.: Effect of Cortisone in Glomerulonephritis and the Nephropathy of Disseminated Lupus Erythematosus, Am. J. Med. **10**: 520, 1951.

12. Boas, N. F., and Soffer, L. J.: The Effect of ACTH and Cortisone on the Serum Hexosamine in Acute Lupus Erythematosus, J. Clin. Endocrinol. **11**: 39, 1951.

with lupus and frequently aids in the differential diagnosis from periarteritis nodosa.

In most instances in which hypertension occurred with treatment, the pressure returned to normal levels with reduction of dosage of the drug. In four patients, however, the hypertension persisted. Of these, three died, two with azotemia; one had had an early elevation of the blood urea nitrogen level, which had later returned to normal levels. In the one living patient (case 6), with persistent hypertension and previous sympathectomy, the blood pressure continued to remain elevated despite considerable reduction in the dosage of the drug. Apparently, hypertension following therapy (even in patients on a daily 200 mg. [8.5 mEq.] salt diet) is not uncommon but is reversible except in those patients in whom renal damage complicates management.

TABLE 6.—*Complications of Therapy*

Complication	No. of Cases
Fulness of face	15
Edema	10
Congestive heart failure	10
Hypertension	9
Acne	7
Hirsutism	6
Alkalosis	6
Euphoria	5
Striae	5
Pigmentation	4
Convulsions	4
Depression	3
Psychosis	1
Diabetes mellitus	1
Osteoporosis	1

TABLE 7.—*Blood Pressure Changes During Therapy*

Case No.	Blood Pressure Before Therapy	Peak Blood Pressure During Therapy
1	95/60	150/100
2	120/80	160/100
3	110/70	160/100
4	110/70	150/90
5	95/50	100/70
6	135/90	200/140
7	95/70	135/85
8	110/65	160/115
9	100/60	160/110
10	105/70	160/110
11	90/60	110/80
12	100/60	110/80
13	100/40	120/90
14	110/70	130/85
15	115/70	120/90
16	110/70	130/70
17	110/70	120/80
18	110/70	180/120

Edema, usually pretibial in location, occurred in 10 patients and was readily controlled with mercurial diuretics.

The mental changes occurring with treatment are of considerable importance.[13] As mentioned previously, the original organic mental syndrome cleared, and of six abnormal electroencephalograms three reverted to a normal pattern. However, mental changes directly associated with therapy subsequently appeared in their stead. Depression occurred in three patients and euphoria in five. These manifestations were generally in excess of the normal effects appropriate to their condition at the time. One patient was overtly psychotic, with marked infantile behavior and paranoid ideas. With reduction in the dosage of the drug most of these initial mental changes tended to disappear. In the patient with the psychotic pattern the mental aberrations promptly cleared with cessation of treatment and subsequently did not recur with reinstitution of therapy. This patient's father had committed suicide, and her mother had been hospitalized in a mental institution.

Convulsions occurred in four patients. Two were patients who were preterminal; in one, the convulsive episodes were associated with septicemia, and one was in status epilepticus, which progressed to death. Convulsions occurring preterminally in patients with acute disseminated lupus erythematosus were not infrequently observed in the days before treatment with corticotropin and cortisone.[14] It is possible that the condition in the first two patients is in the category of disease-induced rather than drug-induced convulsions. The convulsions occurring in the patient with associated septicemia due to Staphylococcus aureus were perhaps attributable to this complication. The patient with status epilepticus was a 12-year-old girl who had a convulsive state on the eighth day of corticotropin therapy. Despite the prompt discontinuance of treatment, however, the patient continued to have recurrent seizures, which could not be controlled with the usual anticonvulsive measures, and the patient ultimately died of pulmonary edema. Dorfman and his co-workers [15] have reported four instances of status epilepticus following corticotropin therapy. These patients had dermatomyositis, rheumatic fever, periarteritis nodosa, and disseminated lupus erythematosus. It is perhaps of interest that cortisone therapy lowers the threshold to electroshock of the brain of the rat.[16] Ransohoff [17] has reported reversal of psychosis and electroencephalographic changes with the intravenous administration of potassium.

Acne and hirsutism occurred in approximately one-third of the group. These changes were reversible when treatment was discontinued. The hirsutism consisted of soft, fine hair growth on the upper lip, the back of the neck, and the sides of the face. A slight to moderate roundness and fulness of the face appeared in 15 patients, which tended to disappear when the dosage of the drug was reduced or treatment stopped entirely. Similarly, bright red abdominal striae occurred in five patients. These changes persisted only as long as treatment was continued. Hypochloremic alkalosis was observed in six patients. This was frequently associated with hypopotassemia of varying degree. To correct this defect we gave potassium chloride either orally or parenterally in doses of 2 to 6 gm. daily. An increase in hypochloremic alkalosis usually followed the administration of mercurial diuretics, and in such patients potassium chloride was administered regularly for several days after each mercurial injection.

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[13] Hoefer, P. F. A., and Glaser, G. H.: The Effects of Pituitary Adrenocorticotrophic Hormone (ACTH) Therapy: Electroencephalographic and Neuropsychiatric Changes in Fifteen Patients, J. A. M. A. **143**: 620 (June 17) 1950.

[14] Klemperer, P.; Pollack, A. D., and Baehr, G.: Pathology of Disseminated Lupus Erythematosus, Arch. Path. **32**: 569 (Oct.) 1941.

[15] Dorfman, A., and others: Status Epilepticus Coincident with the Use of Pituitary Adrenocorticotropic Hormone: Report of 3 Cases, J. A. M. A. **146**: 25 (May 5) 1951.

[16] Woodbury, D. M.; Cheng, C.; Sayers, G., and Goodman, L. S.: Antagonism of Adrenocorticotropic Hormone and Adrenal Cortical Extract to Desoxycorticosterone: Electrolytes and Electroshock Threshold, Am. J. Physiol. **160**: 217, 1950.

[17] Ransohoff, W., and others: The Effect of Sodium and Potassium on the Metabolic and Physiologic Responses to ACTH, Proceedings of the Second Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1951, vol. 1, p. 160.

Congestive heart failure occurred in 10 patients during treatment. In most instances this was evidenced primarily by a gallop rhythm and some hepatic engorgement. In two instances pulmonary edema occurred as a terminal event. The importance of rigid salt restriction must be emphasized, particularly in an illness such as disseminated lupus erythematosus in which cardiac damage so often occurs as part of the disease process. However, even in the absence of any gain in over-all body weight there is an increase in the extracellular space as measured by inulin of 20% to 30%, usually occurring on the eighth or ninth day of therapy. This increase is in the form of a relatively isotonic extracellular fluid and is accompanied by a smaller, but variable, increase in the glomerular filtration rate and renal plasma flow and a minimal increase in the plasma volume. These changes reach a maximal peak on the eighth or ninth day of treatment.[18] These changes slowly revert to the previous state if therapy is either continued or stopped. This considerable increase in the extracellular fluid volume probably contributes to the congestive failure. In most cases heart failure responded promptly to the use of mercurial diuretics and digitalization. The electrocardiographic changes were variable. S-T interval and T wave changes suggestive of pericarditis cleared, but T wave inversions developed in others with therapy. Arrhythmias were seen in five patients, of whom two showed transient auricular fibrillation; one had auriculoventricular block, which reverted to normal with treatment, one had nodal extrasystoles and transient nodal rhythm; and one had a 2:1 auriculoventricular block during a period of congestive failure, which responded well to therapy.

Diabetes mellitus occurred as a complication in one patient. With a dosage of 80 mg. of corticotropin daily this patient exhibited marked glycosuria and a fasting blood sugar level of 320 mg. per 100 cc., although the blood sugar level before the beginning of treatment had been 80 mg. per 100 cc. The patient was in negative nitrogen balance and had marked weight loss associated with polydypsia and polyuria. Eighty units of insulin daily were required to control the glycosuria and hyperglycemia. However, as the daily dose of corticotropin was reduced the insulin requirements became progressively less and eventually could be discontinued entirely. It is interesting to note that this patient had a history of diabetes in his immediate family. The influence of corticotropin and cortisone therapy on carbohydrate metabolism has been well documented,[19] but none of the remaining 17 patients showed any evidence of impaired carbohydrate tolerance during treatment.

Osteoporosis occurred during therapy in one patient, a woman 58 years of age. Roentgenographic study of the spine revealed marked osteoporosis with a compression of the 1st lumbar vertebra and narrowing of the 12th thoracic vertebra. It was our impression that this patient had some postmenopausal osteoporosis that had been intensified by the use of cortisone. After the prolonged administration of methyltestosterone, there occurred a considerable decrease in the back pain, but this was not associated with any roentgen evidence of an increase in calcification of the vertebral column.

RESULTS OF PROLONGED THERAPY

The results of the long-term follow-up are listed in table 8. Therapy was begun as long ago as 20 months prior to writing and as recently as 3 months prior to writing in this series. Sixteen of the 18 patients were followed for 11 to 20 months. One patient (case 5) had only two short courses of three days each, to which she responded well, but she died because of unavailability of the drug during the early period of this study. Eight patients received continuous treatment for periods varying from 3 to 19 months. Nine patients were without therapy for intervals of a week to as long as 11.5 months.

TABLE 8.—*Duration of Therapy and Results*

Case No.	Months of Therapy	Longest Interval Without Therapy	Status as of June 1, 1951	Drugs Used	Average Daily Maintenance Dose (Mg.)
1	15	7 mo.	Without therapy	Corticotropin	40
2	14	3 mo.	Without therapy	Corticotropin Cortisone *	40 25-50
3	15	0	Died after 9 mo. of therapy	Corticotropin Cortisone † Cortisone *	30-50 50-100 50-100
4	15	1-2 weeks	Therapy continued	Cortisone † Corticotropin Cortisone *	25-50 10 25
5	20	Constantly except for 2 three-day courses	Died	Corticotropin	..
6	3	0	Therapy continued	Corticotropin Cortisone *	20-40 50-100
7	5	0	Therapy continued	Corticotropin Cortisone *	10-20 18-25
8	12	2 mo.	Therapy continued	Corticotropin Cortisone *	.. 50-100
9	11	1 week	Died after 11 mo. of therapy	Cortisone † Cortisone *	50-100 50-100
10	17	0	Died after 15 mo. of therapy	Corticotropin Cortisone † Cortisone *	45-60 100 100
11	20	3 mo.	Therapy continued	Corticotropin Cortisone	50 100
12	17	0	Therapy continued	Cortisone † Corticotropin Cortisone *	75-100 45-50 100
13 ‡	13	11½ mo.	Without therapy	Corticotropin	..
14	12	10 mo.	Without therapy	Cortisone *	50-0
15 §	13	6 mo.	Therapy continued	Corticotropin Cortisone *	.. 50-100
16	15	0	Died after 12 days of therapy	Corticotropin	..
17	15	0	Died after 38 days of therapy	Cortisone † Corticotropin	100 45
18	19	0	Therapy continued	Cortisone † Corticotropin Cortisone *	50-100 45-55 75-100

* Given orally.
† Given intramuscularly.
‡ The dose was tapered off over 83 days.
§ The dose of corticotropin was tapered off over 72 days.

At present 12 patients are living and 6 are dead. Eight of these 12 patients require continuous treatment and are being maintained with 50 to 100 mg. a day of cortisone, administered orally. Aside from the difference in potency, milligram for milligram, between corticotropin and cortisone, no differences in therapeutic effect are evident between the two agents.

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[18] Levitt, M. F., and Bader, M. E.: Effect of Cortisone and ACTH on Body Water and Electrolyte Distribution, J. Clin. Investigation **30:** 655, 1951.

[19] Ingle, D. J.: The Production of Glycosuria in the Normal Rat by Means of 17-Hydroxy-11-Dehydrocorticosterone, Endocrinology **29:** 649, 1941. Conn, J. W.; Louis, L. H., and Wheeler, C. E.: Production of Temporary Diabetes Mellitus in Man with Pituitary Adrenocorticotropic Hormone: Relation to Uric Acid Metabolism, J. Lab. & Clin. Med. **33:** 651, 1948.

The effect of prolonged use of either agent on endogenous production of the respective hormones is difficult to evaluate. It has been our custom to taper off gradually when using each drug to allow endogenous production to increase. Hypoadrenocorticism has been reported after sudden withdrawal of cortisone in the treatment of lymphomatous diseases.[20] Experimentally, cortisone is capable of inducing a decrease in adrenal cortical size, and clinically some impairment of adrenal cortical function occurs, as evidenced by a decrease in the urinary excretion of the neutral 17-ketosteroids and failure of such adrenals to respond adequately to subsequent stimulation with corticotropin. However, such refractoriness is only transient and disappears within several days to several weeks after treatment with cortisone is discontinued.

SUMMARY

Eighteen patients with disseminated lupus erythematosus were treated with corticotropin (ACTH) and/or cortisone for periods of from 3 to 20 months. Of this group, 6 have died and 12 are living, of whom 8 continue with treatment. The clinical manifestations of the disorder are described. The incidence in males was greater in this series than previously noted.

Treatment with corticotropin or cortisone in adequate doses caused prompt remission in fever, arthritis, pleuritis, pericarditis, Raynaud's phenomenon, and the organic mental syndrome. The rash, mucous membrane lesions, retinal lesions, and serous effusions cleared more slowly. The anemia improved slowly in those patients with minimal or no renal damage. The lupus cells persisted despite a remission in the disease, although at times they disappeared temporarily. Renal damage tended to persist. Microscopic hematuria was present in all patients and formed elements in the urine in 14 of 18 patients. Azotemia was present in 10 patients, but in 5 of this group the blood urea nitrogen level returned to normal levels after improvement in hydration. The persistence of azotemia is a serious prognostic sign.

The complications and hazards of treatment with corticotropin and cortisone are described. Despite the risks attendant on the use of these drugs, they constitute the most effective agents yet available for the treatment of this disease. It must be emphasized, however, that no actual cures result. It is possible that some patients may be maintained in a state of remission for an indefinitely prolonged period of time with judicious treatment.

Fifth Ave. and 100th St.

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[20] Eliel, L. P.; Pearson, O. H., and West, C. D.: Excessive Losses of Sodium, Chloride, and Water After Administration of Cortisone or ACTH, Suggesting Adrenocortical Insufficiency, abstracted, J. Clin. Investigation **30**: 637, 1951.

EFFECT OF HEPARIN IN CASES OF CORONARY INSUFFICIENCY

EVALUATION BY ELECTROCARDIOGRAPHIC TESTS

Henry I. Russek, M.D., Karl F. Urbach, M.D.
and
Alexander A. Doerner, M.D., Staten Island, N. Y.

In 1949 Gilbert and Nalefski[1] suggested that the favorable results observed from the use of anticoagulant drugs in cases of acute myocardial infarction and angina pectoris may be primarily the result of an increase in coronary blood flow. After this report we attempted to study the effects of heparin and bishydroxycoumarin (dicumarol®) on the electrocardiographic response to standard exercise (Master two-step test)[2] in several patients with coronary heart disease. The negative results obtained in four carefully selected cases discouraged an extensive study at that time.

Our interest was renewed recently, however, when Graham and associates[3] reported marked relief of symptoms in 55 of 59 patients with angina pectoris who had received weekly or biweekly injections of 50 to 100 mg. of heparin. The therapeutic response in these cases was judged from the frequency of anginal attacks and the requirements for glyceryl trinitrate. It was stated that relief from angina was commonly noted after the first few injections of heparin whereas the usual symptoms recurred when saline placebos were substituted for the drug. In the opinion of these authors the relatively small dosage and the infrequency of the injections speak against either a vasodilator or antithrombotic basis for the response. On the other hand, the dramatic relief of angina pectoris paralleled the profound effect of heparin on lipoprotein metabolism (characterized by a shift of particles of high S_f rates to those of successively lower S_f rates). The present study was undertaken for the purpose of determining whether this report of clinical improvement could be correlated with electrocardiographic evidence derived from the application of a standard exercise test.

In previous reports[4] we described an objective method for evaluating the action of various drugs upon the coronary circulation and/or myocardium in man. The technique requires the careful selection of subjects

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A joint project with the National Heart Institute, United States Public Health Service, Washington, D. C.

From the Cardiovascular Research Unit, Department of Medicine, United States Public Health Service *Hospital, Staten Island.*

Consultant in Cardiovascular Disease (Dr. Russek), Fellow in Cardiovascular *Disease (Dr. Urbach)*, and Chief of Medicine (Dr. Doerner).

[1] Gilbert, N. C., and Nalefski, L. A.: The Effect of Heparin and Dicumarol in Increasing the Coronary Flow Volume, J. Lab. & Clin. Med. **34**: 797, 1949.

[2] Master, A. M.; Friedman, R., and Dack, S.: The Electrocardiogram After Standard Exercise as a Functional Test of the Heart, Am. Heart J. **24**: 777, 1942.

[3] Graham, D. M., and others: Blood Lipids and Human Atherosclerosis II. The Influence of Heparin upon Lipoprotein Metabolism, Circulation **4**: *666*, 1951.

with coronary disease who exhibit upon repeated tests under standard conditions a relatively constant positive response to measured exercise.

MATERIAL

After screening a large group of patients with coronary heart disease from the wards and the outpatient department, we selected 14 patients who appeared suitable for this study. In these subjects performance of the Master two-step test at varying intervals during the control period showed S-T segment and T wave changes that were relatively constant for each patient. The group consisted of 13 men and 1 woman, with ages ranging from 48 to 77 years. Of the 14 patients 9 presented the classical symptoms of angina pectoris. One patient was diabetic, and one patient had concomitant hypertensive vascular disease. The resting 12-lead electrocardiogram was normal in 3 and abnormal in 11 cases. Five of the latter exhibited clinical and electrocardiographic evidence of an old myocardial infarction. Abnormal ballistocardiograms were seen in all except one of the subjects (see table).

Summary of Findings in Fourteen Patients Before and After the Administration of Heparin

Case No.	Age, Yr.	Sex	Electro-cardiogram	Ballisto-cardi-ogram *	Exercise Test Results	Angina	Diagnosis †	No. of Heparin Injec-tions ‡	Effect of Treatment on Angina §
1	53	M	Normal	Normal	Positive	0	ASHD	7	Unchanged
2	77	M	Abnormal	IV	Positive	+	ASHD	4	Unchanged
3	53	M	Abnormal	III	Positive	+++	ASHD; old infarct	1	Unchanged
4	51	M	Normal	I	Positive	+	ASHD	5	Unchanged
5	49	F	Normal	II	Positive	++	ASHD	4	Slight improvement
6	53	M	Abnormal	II	Positive	+	ASHD; old infarct	2	Unchanged
7	61	M	Abnormal	III	Positive	0	ASHD; old infarct	1	Unchanged
8	50	M	Abnormal	III	Positive	0	ASHD	3	Unchanged
9	56	M	Abnormal	III	Positive	0	ASHD; old infarct	2	Unchanged
10	48	M	Abnormal	II	Positive	++++	ASHD; old infarct	4	Slight improvement
11	54	M	Abnormal	III	Positive	+	ASHD	4	Slight improvement
12	66	M	Abnormal	III	Positive	++	ASHD	4	Unchanged
13	52	M	Abnormal	II	Positive	+	ASHD; hypertension	1	Unchanged
14	55	M	Abnormal	I	Positive	0	ASHD; diabetes	4	Unchanged

* Classification according to Brown, H. R., Jr.; Hoffmann, M. J., and de Lalla, V., Jr.: Ballistocardiographic Findings in Patients with Symptoms of Angina Pectoris, Circulation 1:132, 1950.
† ASHD = arteriosclerotic heart disease.
‡ The dose was 100 mg. in all except cases 2 and 5 in which 50 mg. was given.
§ The results of the exercise test were unchanged by treatment in all cases.

METHOD

During the control period a series of tests was obtained in each patient under relatively standardized conditions. The studies were carried out in the cardiac laboratory at approximately the same time of day and by the same observers. In most instances the standard Master two-step test was employed. In three patients fewer ascents and descents of the two-step staircase than recommended for the patient's age and weight were performed, because of the severity of the anginal symptoms. In several patients a double Master two-step test was found necessary to produce significantly positive electrocardiographic alterations. In most instances only one test was performed in any 24 hour period. When the amount of exercise necessary to produce consistently positive responses in the individual patient had been established, the identical procedure was repeated five minutes after sublingual administration of glyceryl trinitrate (0.4 mg.). This was invariably followed by electrocardiographic evidence of improved exercise tolerance as shown by disappearance of or decrease in S-T segment depression and T wave changes. When these control observations were completed in each case, heparin was administered intravenously at varying intervals. Eight of the 14 patients received four or more doses of heparin, and in these the interval between injections varied from 1 to 3 days. The remaining six patients received one to three injections. The dose of heparin was 100 mg. for each injection except in two patients, in whom a 50 mg. dose was employed. The exercise electrocardiographic test was made 24 hours after the initial injection and on consecutive days thereafter in 12 of the 14 patients. In two patients the response was also evaluated immediately after the administration of heparin and 6 and 12 hours later. During the period of observation the patients with angina were carefully questioned regarding the frequency and severity of attacks and their requirements for glyceryl trinitrate.

RESULTS

Comparison of the control records taken prior to medication with those obtained after the administration of heparin failed to reveal any changes that could be

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4. Russek, H. I., and others: The Influence of Saline, Papaverine, Nitroglycerin and Ethyl Alcohol on the Electrocardiographic Response to Standard Exercise in Coronary Disease, Circulation 1:700, 1950. Russek, H. I.; Naegele, C. F., and Regan, F. D.: Alcohol in the Treatment of Angina Pectoris, J. A. M. A. 143:355 (May 27) 1950. Russek, H. I.; Regan, F. D., and Naegele, C. F.: 100% Oxygen in the Treatment of Acute Myocardial Infarction and Severe Angina Pectoris, ibid. 144:373 (Sept. 30) 1950. Russek, H. I., and others: Effect of Khellin in Coronary Artery Insufficiency as Evaluated by Electrocardiographic Tests, New York J. Med. 52:437, 1952.

interpreted as evidence of improved exercise tolerance. In two patients (cases 1 and 4 in the table), the tests performed 24 hours after the initial injection of heparin showed less S-T segment depression than that observed in the control records, but this effect was not sustained and was not demonstrable after subsequent heparin injections. In three patients subjective improvement in anginal attacks during or following the course of heparin was reported by the patients. The degree of improvement, however, was so slight that conclusions as to its significance appear to be unwarranted.

SUMMARY

The subjective improvement reported from the use of heparin in cases of angina pectoris suggested a study in which the effect of this drug on induced myocardial ischemia could be measured by an objective technique. By means of the Master two-step test 14 patients with varying degrees of coronary insufficiency were selected, because of the constancy of their electrocardiographic response during control periods. It was found that the intermittent administration of heparin in these subjects was without significant effect on the electrocardiographic response to standard exercise. The striking subjective improvement in anginal symptoms reported by others was not confirmed by this study.

176 Hart Blvd. (Dr. Russek).

CLINICAL NOTES

DEATH DUE TO AGRANULOCYTOSIS INDUCED BY METHIMAZOLE THERAPY

Norman W. Specht, M.D.
and
Earl J. Boehme, M.D., Los Angeles

Since the introduction of thiouracil, the antithyroid activity of many compounds has been investigated.[1] In 1949, Stanley and Astwood [2] reported that methimazole (1-methyl-2-mercaptoimidazole, also known as "tapazole") was highly active in 30 cases of hyperthyroidism. Subsequently an additional 185 cases have been reported by various investigators.[3] All agree that the drug is highly effective. Only Bartels and Sjogren [3d] mention the occurrence of toxic reactions. In their series of 100 patients, 6 had a skin rash; treatment with the drug had to be discontinued in 3 of the 6 cases. These figures agree with the earlier reported incidence of skin reactions, which occurred in approximately 5% of patients receiving this drug.[4] At the end of the paper, but not included in their series, Bartels and Sjogren [3d] report that leukopenia occurred in one patient who was being treated with methimazole. Bartels [5] stated that, in a series that now contains over 250 cases, leukopenia developed in only one patient and that she had previously had agranulocytosis that resulted from propylthiouracil therapy. Recently Croke and Berry [6] reported a case of agranulocytosis that was believed to be due to treatment with methimazole. Recovery followed discontinuation of treatment with the drug.

In a careful examination of the literature, we failed to find record of a death from agranulocytosis due to methimazole therapy. The purpose of this report is to record such a case.

REPORT OF A CASE

A 67-year-old white woman was first seen in the Thyroid Clinic of the White Memorial Hospital on Oct. 2, 1951. She stated that since June, 1951, she had had spells of weakness and fatigue accompanied by increasing nervousness and rapid beating of her heart. Although her appetite had remained good, she had lost 10½ lb. (4.8 kg.) during the four month period. She had not been aware of having had a goiter until her attention was called to it by a physician. The patient's past history was noncontributory except for a radical mastectomy done in December, 1949, for adenocarcinoma.

Physical examination revealed a cooperative thin white woman with some evidence of weight loss. To the right of the trachea a substernal thyroid nodule, 5 by 3 by 3 cm., was easily palpable when the patient swallowed. The left side of the neck was without nodules. The left breast had been surgically removed. The blood pressure was 160 systolic and 95 diastolic; the pulse rate was 80 per minute, and the rhythm was regular. The rest of the physical examination contributed nothing of significance. A complete blood cell count showed hemoglobin of 13.7 gm. per 100 cc., 4,510,000 red cells, and 7,000 leukocytes, with 42% neutrophils, 46% lymphocytes, 6% monocytes, 5% eosinophils and 1% band cells. The results of urinalysis were normal. The Kolmer and Kline reactions were negative. The protein-bound iodine content was 9.9 µg per 100 cc. of serum, (normal 4 to 8 µg). Administration of a tracer dose of 102 µc of I^{131} showed an uptake of 24% in the thyroid in 24 hours.

A diagnosis of nodular goiter was made, and surgery was planned. Because of some evidence of thyrotoxicosis, on Oct. 8, 1951, treatment was begun with phenobarbital, 15 mg. three times daily, and methimazole, 10 mg. three times daily. The patient was warned that she should report to the clinic if a skin rash, sore throat, or fever developed.

On Oct. 22 she returned to the clinic and reported that she felt stronger and had gained 1 lb. (0.5 kg.). On Nov. 5 she reported further improvement and had a total weight gain of 2½ lb. (1.1 kg.). The next day the first serious signs developed. The patient had extreme weakness, generalized aching, a liquid bowel movement, and fever. After three days her family physician was called. Because of the high temperature and jaundice, he gave an injection of penicillin. The next day the physician found the patient dyspneic. Her temperature was higher and her jaundice more pronounced. On the fifth day of her acute illness she was admitted to the White Memorial Hospital. During her acute episode at home she continued to take methimazole three times daily.

Her temperature on admission was 105 F by rectum, pulse rate 116 per minute, respirations 34 per minute, and blood pressure 96/60. She was lethargic but conscious. Her skin and scleras were mildly icteric. The liver was palpable two fingerbreadths below the costal margin. Immediate laboratory studies found the white blood cell count to be 1,300 per cubic milli-

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From the Departments of Medicine and Surgery, College of Medical Evangelists.

[1] Stanley, M. M., and Astwood, E. B.: Determination of the Relative Activities of Antithyroid Compounds in Man Using Radioactive Iodine, Endocrinology **41**: 66 (July) 1947. McGinty, D. A., and Wilson, M. L.: Comparative Activity of Thiouracil and Other Antithyroid Compounds in the Rhesus Monkey, Endocrinology **44**: 546 (June) 1949. Searle, C. E.; Lawson, A., and Morley, H. V.: Antithyroid Substances: Some Mercaptoglyoxalines, Mercaptothiazoles and Thiohydantoins, Biochem. J. **49**: 125 (June) 1951.

[2] Stanley, M. M., and Astwood, E. B.: 1-Methyl-2-Mercaptoimidazole: An Antithyroid Compound Highly Active in Man, Endocrinology **44**: 588 (June) 1949.

meter, with 87% lymphocytes and 13% monocytes. No neutrophils were found. The icterus index was 40 units. The urine contained bile but no urobilinogen.

Vigorous therapy to control the infection during the agranulocytosis was started immediately. Penicillin therapy and intravenous administration of terramycin, fluids, and whole blood were promptly begun. Ten milligrams of corticotropin (ACTH) was added to the fluids given intravenously. Oxygen was administered continuously by nasal catheter. In six hours the patient showed no improvement; however, she remained conscious and alert, though very dyspneic. Another 500 cc. of blood and corticotropin was given by vein. After 18 hours the patient had a cold, sweaty skin, her blood pressure was unobtainable, and she died.

Autopsy revealed a nodular thyroid gland that weighed approximately 40 gm. There was bilateral bronchopneumonia. In the first left intercostal space and in the posterior portion of the lower lobe of the left lung there were discrete 2-cm. nodules of metastatic carcinoma from the previous breast malignant lesion. The liver was 7 cm. below the costal margin and weighed 1,280 gm. Its capsule was slightly distended, and the biliary tree was free from obstruction. Results of the remainder of the gross examination, including examination of the brain, were not significant. Microscopic examination confirmed a bilateral bronchopneumonia and metastatic adenocarcinoma. The thyroid showed many dilated follicles with flat and cuboidal cells. One section showed a typical fetal adenoma. On other sections studied there were areas of fibrosis, but no hyperplasia or carcinoma was found. Sections of the liver revealed slight central lobular congestion with an increased number of round cells in the periportal areas. The bone marrow showed a definite decreased cellularity with a large number of megakaryocytes and a decreased number of cells of the myelocytic series. Many of these showed degenerative changes characterized by swelling of the cytoplasm with indistinct margins and pyknosis or irregular staining qualities of the nuclei. Sections also showed groups of tumor cells in the marrow.

COMMENT

From the information available it seems justifiable to conclude that the agranulocytosis in this patient was due to methimazole therapy. Jaundice, without demonstrable morphological changes in the liver, was also present. The cause for this patient's inability to handle biliary pigments could not be determined. Hepatic function may have been impaired by the drug, the severe infection, or both. It is our opinion that this patient's unfortunate outcome could have been avoided if she had promptly discontinued ingestion of methimazole when signs of toxicity appeared and reported her symptoms to the physicians responsible for her care.

In the use of propylthiouracil, it is the policy of our clinic to consider that the prompt reporting of a sore throat or fever is adequate warning of impending granulocytopenia. Several blood cell counts are taken during the course of treatment. It is noted that sore throat was not a symptom of the agranulocytosis in our case or in the case reported by Croke and Berry.[6] Both patients became severely ill in a few hours. It would seem that not only the bone marrow but also the entire body was overwhelmed by the toxicity.

Any physician who uses potentially dangerous drugs, such as those of the antithyroid group, must depend on the cooperation of the patient during their administration. Regular patient visits to the physician, frequent blood cell counts, and, at the onset of toxic symptoms, prompt discontinuation of the use of drug and immediate notification of the physician giving the drug are essential for avoidance of a fatal outcome.

SUMMARY

A case of fatal agranulocytosis associated with pneumonia and jaundice occurring during the administration of methimazole ("tapazole") is reported.

312 N. Boyle Ave.

3. (*a*) Reveno, W. S., and Rosenbaum, H.: Treatment of Hyperthyroidism with 1-Methyl-2-Mercaptoimidazole, J. A. M. A. **143**:1407 (Aug. 19) 1950. (*b*) Beierwaltes, W. H.: 1-Methyl-2-Mercaptoimidazole and 1-Ethyl-2-Mercaptoimidazole: A Clinical Evaluation of 2 New Antithyroid Drugs, J. Lab. & Clin. Med. **36**:861 (Dec.) 1950. (*c*) Taylor, N.; Teitelbaum, M., and Large, A.: Treatment of Thyrotoxicosis with Methimazole (1-Methyl-2-Mercaptoimidazole), Am. J. M. Sc. **222**:138 (Aug.) 1951. (*d*) Bartels, E. C., and Sjogren, R. W.: 1-Methyl-2-Mercaptoimidazole: A New Active Antithyroid Agent, J. Clin. Endocrinol. **11**:1057 (Oct.) 1951. (*e*) Hallman, B. L., and Bondy, P. K.: Experience with Methimazole (Tapazole) in the Treatment of Hyperthyroidism, Am. J. Med. **11**:724 (Dec.) 1951.

4. The Bulletin of the Pharmacy and Therapeutics Committee: New Approved Drugs, Univ. Michigan M. Bull. **17**:203 (June) 1951.

5. Bartels, E. C.: Personal communication to the authors.

6. Croke, A. R., and Berry, J W.: Agranulocytosis Occurring During Methimazole ("Tapazole") Therapy, J. A. M. A. **148**:45 (Jan. 5) 1952.

ACUTE URINARY RETENTION AS A COMPLICATION OF PREGNANCY

REPORT OF A CASE

Maxwell Spring, M.D.
and
Jesse J. Hymes, M.D., Bronx, N. Y.

The urinary bladder functions normally during pregnancy; however, when a retroverted uterus is present during the pregnant state, the bladder may not empty properly. Severe uterine retroflexion can result in complete obstruction of the urinary channel. The obstruction is caused by the expanding uterus being securly wedged between the os pubis and the sacrum, with the urethra occluded at the point where pressure is exerted by the cervix.

In the available literature there are three reports of patients who suffered complete urinary retention in pregnancy due to uterine retroflexion: Smellie (1876)[1]; Crabtree (1942)[2]; and Burdon, Maurer, and Lich Jr. (1951).[3] All of these patients were in the fourth month of pregnancy; the patient reported on in this paper was in the third month. In all four cases the degree of retroflexion was complete, so as to prevent the rise of the uterus out of the true pelvis. Urinary retention usually occurs during the third or fourth month, because the uterus is too small before that time to impinge itself in the pelvic cavity and exert pressure. After that time the displaced uterus, if it is not adherent, usually undergoes spontaneous reduction. An eccentric hypertrophy occurs, in which the anterior wall undergoes more rapid distention than the posterior wall and, emerging above the superior strait, eventually draws up the rest of the

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From the Departments of Medicine and Urology, Bronx Hospital, New York.

[1] Smellie, W.: Treatise on the Theory and Practice of Midwifery, edited by A. H. McClintock, London, The New Sydenham Society, 1876, vol. 1, p. 147.

[2] Crabtree, E. G.: Urological Diseases of Pregnancy, Boston, Little, Brown & Company, 1942, p. 210.

[3] Burdon, S.; Maurer, J. E., and Lich, R., Jr.: Acute Retention in Pregnancy, J. Urol. **65**:578 (April) 1951.

organ. After the fundus has once passed the promontory of the sacrum, there is no fear of a recurrence of the condition.

Treatment consists of manual replacement of the pregnant uterus after the bladder has been decompressed. This is not always possible if the uterus is impacted. About four to seven days of treatment with retention catheter drainage and antibiotics, enabling the bladder to regain the contractility that has been lost from overdistention and associated infection, will sometimes suffice even if the uterus is not replaced, as in our case. This procedure can be repeated if the bladder again fills up, until such time as the uterus has lifted itself out of the pelvis, usually during the fifth month. Sedation is contraindicated, as it will depress the urinary urge and cause the bladder to overdistend; also, the patient should be encouraged to urinate about every two to three hours to prevent overfilling and resultant bladder atony.

REPORT OF CASE

A 29-year-old multipara was admitted to the private service of one of us (M. S.) at the Bronx Hospital on Aug. 25, 1950, with acute urinary retention of four days' duration. Her last menstrual period had been May 20, 1950. Eighteen days before admission, she began to have difficulty voiding in the morning. It took her about one hour to pass her urine. This occurred every morning until four days prior to admission when urinary retention developed, which lasted for 24 hours; then she had to be catheterized. This recurred on succeeding days, and hospitalization was advised. She had no associated urinary symptoms of hematuria, pyuria, or dysuria. Systemic review was negative.

The physical examination showed blood pressure to be 120/80 and pulse 112, and breasts showed the changes of pregnancy. The bladder was enlarged to the umbilicus and was tender. Pelvic examination was performed after a retention catheter was inserted, and 1,200 cc. of clear urine was removed. The cervix was anterior. The fundus showed enlargement compatible with a three to four month pregnancy, markedly retroverted, and fixed.

Laboratory studies revealed hemoglobin 92% (13 gm.), Sahli; red blood cell count, 4,730,000; white blood cell count, 6,500, with 63% polymorphonuclears, 36% lymphocytes, and 1% monocytes on a differential smear. The urea nitrogen was 10 mg. per 100 cc. The urine had a specific gravity of 1.022. There was a trace of albumin present but no sugar. Microscopically, four to seven white blood cells were present per high power field. The electrocardiogram was within normal limits.

On Aug. 26, 1950, cystoscopy was done by one of us (J. H.). A No. 21 French, Brown-Buerger convex cystoscope was passed into the bladder with marked difficulty, because of distortion of the urethra by pressure of the gravid retroverted uterus. The distorted urethra necessitated depression of the cystoscope and a shift to the right side in order to make it pass. The cystoscope was fixed in this position. Observation revealed that the floor of the bladder was pushed up. The mucosa was markedly congested and showed bullous edema of the neck and urethra. The ureteral orifices were both normal. Intravenous pyelography and cystography on Aug. 27 were within normal limits except for an elevation of the floor of the bladder due to the retroverted uterus.

Following the cystoscopy, the patient was placed on continuous catheter drainage and was given aquacillin® (aqueous penicillin suspension), 300,000 units twice a day, and terramycin, 250 mg. four times a day. After four days the catheter was removed. Attempts to replace the uterus were unavailing; however, the patient voided spontaneously without too great difficulty, and no residual urine was present in the bladder. She was discharged on Aug. 31, 1950, and advised to urinate every two to three hours day and night in order to prevent overfilling of the bladder. About a month after discharge from the hospital, she was able to void normally as she desired. She carried to term without further urinary difficulty.

SUMMARY

A case of acute urinary retention complicating pregnancy is discussed. The condition is rare and is caused by a retroverted uterus with the cervix pressing on the bladder neck and trigone. Only three previous cases are to be found in the literature. Treatment is discussed. Reasons for its occurring about the third or fourth month of pregnancy are explained.

628 E. 141 St. (Dr. Spring).

UNUSUAL REACTION TO INTRAPLEURAL ADMINISTRATION OF STREPTOKINASE AND STREPTODORNASE

George L. Baum, M.D.
and
Philip Oransky, M.D., Coral Gables, Fla.

Streptococcic fibrinolysin (streptokinase) and streptococcic desoxyribonuclease (streptodornase) have been found to be beneficial in treating a variety of clinical states. Their mode of action and therapeutic usefulness have been described elsewhere.[1] These enzymes have been chiefly employed in the liquefaction of pleural exudates. Toxic systemic reactions caused by these substrates have been reported.[2] In at least 50% of the patients treated there is a febrile reaction, with associated malaise, headache, orthopnea, and, occasionally, nausea. This generally occurs approximately four to six hours after the administration of streptokinase and streptodornase, subsiding in the ensuing 24 to 48 hours. According to the protocol furnished by the manufacturers of the drugs, these side-effects are treated symptomatically and rarely are of a nature requiring cessation of treatment. It is the purpose of this report to show that the thermal reaction may be attained by serious consequences and that the patient should be treated by prompt removal of the liquefied exudate. The following case is, to our knowledge, the first reported instance of circulatory collapse associated with hyperpyrexia following use of streptokinase and streptodornase.

From the Medical Service, Veterans Administration Hospital, Coral Gables, Fla.

Published with the permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed and conclusions drawn by the authors.

[1] (*a*) Christensen, L. R.: Methods for Measuring the Activity of Components of the Streptococcal Fibrinolytic System, and Streptococcal Desoxyribonuclease, J. Clin. Investigation **28:** 163-172, 1949. (*b*) Tillett, W. S., and Sherry, S.: The Effect in Patients of Streptococcal Fibrinolysin (Streptokinase) and Streptococcal Desoxyribonuclease on Fibrinous, Purulent, and Sanguinous Pleural Exudations, ibid. **28:** 173-190, 1949. (*c*) Sherry, S.; Johnson, A., and Tillett, W. S.: The Action of Streptococcal Desoxyribose Nuclease (Streptodornase), In Vitro and on Purulent Pleural Exudations of Patients, ibid. **28:** 1094-1104, 1949. (*d*) Johnson, A. J.: Cytological Studies in Association with Local Injections of Streptokinase-Streptodornase into Patients, ibid. **29:** 1376-1386, 1950. (*e*) Tillett, W. S.; Sherry, S., and Read, C. T.: The Use of Streptokinase-Streptodornase in the Treatment of Postpneumonic Empyema, J. Thoracic Surg. **21:** 275-297, 1951. (*f*) Tillett, W. S.; Sherry, S., and Read, C. T.: The Use of Streptokinase-Streptodornase in the Treatment of Chronic Empyema, with Interpretive Discussion of Enzymatic Actions in the Field of Intrathoracic Diseases, ibid. **21:** 325-341, 1951. (*g*) Hubbard, W. N., Jr.: Systemic Toxic Responses of Patients to Treatment with Streptokinase-Streptodornase (SK-SD), J. Clin. Investigation **30:** 1171-1174, 1951. (*h*) Miller, J. M.; Ginsberg, M.; Lipin, R. J., and Lang, P. H.: Clinical Experience with Streptokinase and Streptodornase, J. A. M. A. **145:** 620-624 (March 3) 1951.

[2] Tillett and Sherry.[1b] Sherry, Johnson, and Tillett.[1c] Tillett, Sherry, and Read.[1f] Hubbard.[1g] Miller, Ginsberg, Lipin, and Lang.[1h]

REPORT OF A CASE

A 51-year-old white man was transferred to the Veterans Administration Hospital on Jan. 12, 1952, with a three week history of dyspnea, right-sided pleuritic pain, and lowgrade fever. The patient had been treated at another hospital with penicillin administered intramuscularly and terramycin administered orally. Several thoracenteses were performed.

On admission, the patient had a temperature of 100 F orally, a pulse rate of 100 per minute, respirations 20 per minute, and blood pressure 140/90 mm. Hg. There was no cyanosis. The trachea was displaced to the left. Flatness and absent breath sounds were elicited over the lower half of the right side of the chest, anteriorly and posteriorly. Expiratory wheezes were heard over the right side of the chest anteriorly. The remainder of the examination was noncontributory.

Laboratory Data.—On admission, the leukocyte count was 9,500, with a normal differential, and the red blood cell count per 100 cc. (Haden-Hauser method). Hematocrit was 44%. Urinalysis was normal. Blood serology (Kahn) was negative. Serum chloride expressed as sodium chloride was 584 mg. per 100 cc.; blood urea nitrogen was 11 mg. per 100 cc.; and carbon dioxide combining power was 56. Pleural fluid cultures were negative for acid-fast bacilli, fungi, and pathogenic organisms. No tumor cells were found in pleural fluids examined. The blood culture was negative, and a sputum culture revealed nonpathogenic bacilli. A roentgenogram of the chest revealed an extensive pleural effusion, almost completely filling the right hemithorax. The mediastinum and heart were displaced to the left. The left lung field was clear.

Hospital Course.—The patient's temperature varied from 99 to 100 F during the first three hospital days. Treatment included the intramuscular administration of aqueous penicillin, in a dosage of 300,000 units twice daily. On Jan. 15, approximately 1,000 cc. of a rapidly clotting serosanguinous fluid were aspirated from the right pleural cavity with considerable difficulty. Streptokinase, 100,000 units, with streptodornase, 25,000 units, were instilled intrapleurally.

About eight hours after the administration of these enzymes, the patient experienced a sharp, shaking chill followed by a temperature rise to 105 F rectally. He was dyspneic, slightly cyanotic, and complained of right-sided pleuritic pain. Supportive therapy included codeine sulfate, 1 grain (0.06 gm.), with acetylsalicylic acid, 10 grains (0.65 gm.), given every four hours for three doses, alcohol spongings, and oxygen inhalation by nasal catheter. Approximately six hours later, the temperature was 101.8 F rectally, the rate of the apical heart beat 128, the pulse weak and thready, and the respirations 40 per minute. A blood pressure reading was unobtainable. Auscultation of the chest revealed prolonged expiratory wheezes bilaterally. An electrocardiographic tracing at this point was interpreted as sinus tachycardia. The patient was immediately treated with intravenous fluid therapy, including two units of plasma, 1,000 cc. of 5% glucose in distilled water, and 1,000 cc. of whole blood given over the ensuing six hours.

It was deemed advisable to rid the pleural cavity of any toxic substances that might be present. A total of 2,300 cc. of serosanguinous fluid was aspirated from the right pleural cavity. Additional therapy included the intravenous administration of diphenhydramine (benadryl®) hydrochloride, 50 mg. every four hours for five doses, and *l*-arterenol (levophed®) given according to the protocol furnished by the manufacturer. Blood pressure reached normal levels approximately seven hours after the patient was first noted to be in shock. An additional liter of 5% glucose in distilled water was given slowly intravenously. Thereafter, the blood pressure and apical rate were stabilized, with marked clinical improvement. The patient was able to take fluids and nourishment orally. Another thoracentesis, yielding 1,500 cc. of serosanguinous pleural fluid, was performed the same day.

Blood studies were obtained during the period of shock and on subsequent days. Serum chloride was 375 mg. per 100 cc. (expressed as sodium chloride), increasing to 560 mg. per 100 cc. on the following day. Carbon dioxide combining power was 30 volumes per cent, rising to 66 volumes per 100 cc. the next day. Blood urea nitrogen was 30 mg. per 100 cc., falling to 16 mg. per 100 cc. in 24 hours. The hematocrit was 44%, erythrocyte count 4,100,000 per cubic millimeter, and hemoglobin 12 gm. per 100 cc. These values did not change materially on subsequent days. Total circulating eosinophils were 13 per cubic millimeter during the period of shock, 48 per cubic millimeter two days later, and 53 per cubic millimeter after six days. On Feb. 5, total circulating eosinophils were 184 per cubic millimeter, falling to 66 per cubic millimeter four hours after the injection of 25 mg. of adrenocorticotropic hormone intramuscularly. The febrile reaction lasted approximately 72 hours and the circulatory collapse at least 7 hours.

Further clinical studies, including two bronchoscopies with bronchial biopsy, revealed the presence of a bronchogenic carcinoma. Thoractomy performed on Feb. 7, revealed an extensive unresectable tumor involving the right middle and lower lobes and invading the pleura and chest wall. The patient left the hospital for home care on Feb. 25, 1952.

COMMENT

The problem of systemic toxicity to treatment with streptokinase and streptodornase has been investigated elsewhere.[3] Careful cytological studies on pleural fluids after the administration of these enzymes have been reported.[4] With the liquefaction of the exudate, there is an outpouring of serum and leukocytes into the pleural cavity. These enzymes have been found to be antigenic,[5] although allergic reactions are stated to be rare. The etiology of the thermal reaction has not yet been clearly determined; however, it is believed to be referable either to impurities in the manufactured substances or to breakdown products of enzymatic digestion rather than to the primary condition being treated.[1g]

We are reporting this case as an instance of anaphylactoid shock that occurred secondary to the administration of streptokinase-streptodornase. Products of protein digestion may act as capillary poisons under given conditions, as stated by Davis.[6] It may be argued that the rapid outpouring of serum from the circulatory system into the pleural cavity may have been responsible for the state of shock; however, the failure of the hematocrit or hemoglobin concentration to vary significantly makes this unlikely. In addition, there were no evidences of either hemorrhage or any of the other known causes of circulatory collapse. The patient had received both acetylsalicylic acid and codeine sulfate prior to and following this episode without any untoward effects. The electrolytic changes of shock have already been described in detail [7] and require no elaboration in this discussion. The marked eosinopenia can be considered to be the result of adrenocortical stimulation secondary to stress.[7c]

The intrapleural administration of streptokinase-streptodornase is therefore not without danger. A case with fatal outcome, following its intrathecal use, has been reported.[8] It is our recommendation that whenever a febrile response follows the injection of these enzymes, the contents of the serous cavity being treated should be promptly evacuated. This would prevent any further absorption of toxic products. The patient should also be carefully observed for evidences of circulatory depression and vigorously treated if it occurs.

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[3] Tillett and Sherry.[1b] Hubbard.[1g]

[4] Sherry, Johnson, and Tillett.[1c] Johnson.[1d] Tillett, Sherry and Read.[1e]

[5] Christensen.[1a] Tillett and Sherry.[1b]

[6] Davis, H. A.: Shock and Allied Forms of Failure of the Circulation, New York, Grune and Stratton, Inc., 1949, pp. 128-170.

[7] (*a*) Davis.[6] (*b*) Moon, V. H.: Shock: Its Dynamics, Occurrence and Management, Philadelphia, Lea & Febiger, 1942, pp. 24-34, 158-162. (*c*) Selye, H.: The Physiology and Pathology of Exposure to Stress: A Treatise Based on the Concepts of the General-Adaptation-Syndrome and the Diseases of Adaptation, Montreal, Canada, Acta, Inc., 1950, pp. 95-103, 404-432.

[8] Craddock, W. L., and Haddock-Suarez, J.: Terminal Hyperthermia Following Intrathecal Streptokinase Administration in a Case of Tuberculous Meningitis, Ann. Int. Med. 36: 168-171, 1952.

SUMMARY

A case of pleurisy with effusion treated with streptokinase-streptodornase has been discussed. It is felt that the use of the enzyme combination was the direct cause of the pyrogenic and anaphylactoid reaction.

HEMIPLEGIA DURING TETRAETHYLTHIURAM DISULFIDE (ANTABUSE®) THERAPY

Wingate M. Johnson, M.D., Winston-Salem, N. C.

Although tetraethylthiuram disulfide (antabuse®) has been used in many thousands of cases, I have been unable to find any report of a cerebral vascular accident occurring in connection with its use. In the case to be reported the development of hemiplegia after the fifth dose of this drug may have been coincidental, but I feel that it should be on record, in order that those using the drug may be aware of the possibility of such a complication.

REPORT OF A CASE

A 49-year-old spinster entered the North Carolina Baptist Hospital on Nov. 21, 1951, evidently intoxicated with alcohol and with a history of having been drinking heavily for four or five days. For many years she had been a periodic drinker and had been in many hospitals and "sanatoriums" and also in a few jails. Every psychiatrist who had seen her considered her a true psychopath. Her relatives were anxious that she be given tetraethylthiuram disulfide, since they considered it the last hope of ending her addiction to alcohol. After she had become sober and after much persuasion, she agreed to take the treatment.

The patient was a well-developed, well-nourished white woman who looked about her stated age. Her blood pressure was 160 systolic and 82 diastolic. The eyegrounds were normal, and the results of a general physical examination were negative. Results of urinalysis were negative; the specific gravity was 1.018. The blood cell count showed 16.7 gm. of hemoglobin and 5,000,000 red blood cells. The corrected sedimentation rate was 18 mm. in an hour. Kahn and Wassermann reactions of the blood were negative. The nonprotein nitrogen and the fasting blood sugar levels were, respectively, 30 and 100 mg. per 100 cc. A sulfobromophthalein sodium liver function test showed no dye retention at the end of 30 minutes. Roentgen examination of the chest showed the lungs to be normal and the heart and aorta of normal size and shape, without calcification.

On Nov. 24, the fourth day after admission, the patient was given 1 gm. of tetraethylthiuram disulfide at bedtime, and the dose was repeated for the next four nights. The only effect noted was some drowsiness each morning. On the morning of Nov. 28, after the fourth dose, she was given 10 cc. of whiskey as a trial dose. This produced moderate flushing of the face and conjunctivas, and the pulse rate increased from 80 to 92 beats per minute. The systolic blood pressure fell only 9 mm. in 10 minutes—from 159 to 150—and the diastolic remained unchanged. Twenty minutes after ingestion of the whiskey, when she heard the telephone ring, the patient became excited, thinking it might be an important call for her, and the blood pressure rose to its original level. The rest of the day was uneventful, and the fifth dose of the drug was given at bedtime.

At 5 o'clock the next morning the patient rang for the nurse and complained of a headache. This grew worse, until at 7:45 a. m. the medical resident ordered 64 mg. of codeine to be given hypodermically. The patient said that she did not care for breakfast; when the nurse next looked in the room, she was apparently asleep. When I saw her at about 11 a. m., it was evident that she had had a cerebral vascular accident. She could not be roused; her face was drawn to the left; and there was a flaccid paralysis of the right arm and leg, with positive Hoffman and Babinski signs on the right. Her blood pressure was 220 systolic and 120 diastolic. Both Dr. R. L. Masland, neurologist, and Dr. Eben Alexander, neurosurgeon, concurred in the diagnosis of right hemiplegia, probably from a cerebral thrombosis. Lumbar puncture obtained a clear fluid, with a pressure of 210 mm. of water. Two hundred thirty-five crenated red blood cells were counted. The Pandy, colloidal mastic, and Kahn reactions were all negative; the spinal fluid protein was 58 mg. per 100 cc.

Dr. Alexander performed a left stellate ganglion block, injecting 30 cc. of 1% procaine hydrochloride. Papaverine hydrochloride, 32 mg. every two hours, was prescribed, and two intramuscular injections of a 50% solution of magnesium sulfate, 10 cc. with 1 cc. of 1% procaine, were given at 4 and 6 p. m.

The patient showed rapid improvement. Her blood pressure dropped steadily within 12 hours to 158 systolic and 90 diastolic but rose the next day to 190 systolic and 100 diastolic. After a third injection of magnesium sulfate, the pressure again came down gradually, to 155 systolic and 90 diastolic. She was able to talk fairly well and was beginning to move the right arm and leg. After the fourth day the blood pressure ranged between 110 and 140 systolic and 70 and 90 diastolic, except for a few transient elevations to 155 to 160 systolic and 90 to 100 diastolic. These could be ascribed to excitement.

The dosage of papaverine was reduced to 32 mg. every four hours on Dec. 2, and its use was discontinued on Dec. 4. Improvement in every respect continued, and by the fifth day the patient was able to get out of bed and walk with assistance. She was discharged on Dec. 11, 12 days after the occurrence of the cerebral vascular accident. When seen on Dec. 20, she was able to walk without difficulty and could use her right arm fairly well but was still unable to write with it. Her face was still slightly drawn to the left.

COMMENT

As far as I can learn, this is the first case in which cerebral thrombosis has occurred in the course of treatment with tetraethylthiuram disulfide. Jacobsen,[1] in reviewing 200 cases in which this drug was used, stated that three patients died "from cerebral hemorrhage, accident (while sober) and suicide." Apparently, however, the deaths all occurred after the initial course of treatment and were not to be ascribed to the use of the drug. This inference is justified by Jacobsen's comment that "Antabuse in itself is relatively innocuous, though side-effects, such as drowsiness, tiredness and indigestion may occur. In general, such side-effects are without practical importance, and can be kept under control by adjusting the dosage."

In discussing Dr. Jacobsen's paper, however, Partridge points out that a fall in blood pressure may occur during treatment with tetraethylthiuram disulfide and suggests that this may result in an increased liability to coronary thrombosis.[2] Although he did not mention cerebral thrombosis as a possible complication, the cerebral vessels are as vulnerable to thrombosis as are the coronaries. The present case is reported in the hope that, if

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From the Department of Internal Medicine of the Bowman Gray School of Medicine of Wake Forest College.

[1] Jacobsen, E.: Biochemical Methods in the Treatment of Alcoholism, with Special Reference to Antabuse, Proc. Roy. Soc. Med. 43: 519-526 (July) 1950.

[2] Partridge, in discussion on Jacobsen,[1] Brit. J. Addiction 47: 18-25, 1950.

others have had similar experiences in even a single case, they will be stimulated to report them.

It is possible that this cerebral accident was merely coincidental with the use of the drug and not attributable to it. The same emotional stress that probably precipitated the patient's drinking bout just before her admission to the hospital may have produced a dangerous rise in blood pressure. She herself is convinced, however, that treatment with the drug was responsible. Needless to say, a resumption of tetraethylthiuram disulfide therapy in this case is not contemplated.

300 S. Hawthorne Rd.

POISONING FROM TETRAETHYLPYROPHOSPHATE (TEPP)

Niels C. Klendshoj, M.D., Buffalo
William G. Moran, M.D., Portsmouth, N. H.
Milton Feldstein, M.S., Buffalo
and
Harry E. Fidler, M.D., Derry, N. H.

The use of organic phosphates as insecticides is becoming widespread in agriculture. These substances have a high degree of toxicity, necessitating adequate precautions in their routine employment. Such precautions have been emphasized by the manufacturers as well as by various medical organizations and publications. The toxic properties of the organic phosphates are derived from their ability to inhibit cholinesterase. They produce peripheral symptoms equivalent to the stimulation of postganglionic fibers of the parasympathetics, thus simulating the effect of muscarine. This action is counteracted by atropine, which is used as an antidote. The organic phosphates also exhibit effects similar to those of nicotine being able to stimulate fibers to skeletal muscle. This effect is not influenced by atropine. The autonomic ganglions are stimulated in the early stages of poisoning but are blocked in more extensive poisoning. Metcalf [1] and Lehman [2] have described in more detail the mode of action of these substances. In the case reported here death occurred in a very short span of time following the ingestion of tetraethylpyrophosphate (TEPP). A similar poisoning, but one which did not terminate fatally, has been reported by Faust.[3]

REPORT OF CASE

The patient was a 16-year-old male student who worked on a farm in his spare time. On the day of his death he was assigned to help a spraying crew in preparing the last spray operation of the day at 4 p. m. The exact time was well known. The victim aided in this operation by measuring tetraethylpyrophosphate from the original trade container into a pint jar. While performing this task one of his co-workers noticed that he had lifted the jar up to his face. The man warned him against the danger and was told by the boy that no material had been swallowed; however, the boy began to walk erratically in circles almost immediately, making violent attempts to expectorate. Shortly afterward he became comatose. A physician arrived immediately and injected 1/75 grain (0.8 mg.) of atropine intravenously. He noticed, while doing so, that the blood was almost black and the cells appeared to be agglutinated. Immediately after injection the attending physician was unable to elicit a heartbeat. He determined that death had occurred at the time of or just prior to the injection of atropine. This time was 4:07 p. m. It was observed that the body of the dead boy was wet with perspiration and that the skin color was a dark purplish-blue. The pupils were pinpoint size, equal, and regular. The boy had excreted approximately five tablespoonfuls of saliva at the spot where he was lying.

Postmortem examination was performed 24 hours later. The skin was discolored with irregular red to purplish patches, most intense in dependent locations. The peritoneal cavity contained a small amount of slightly blood-tinged serous fluid, and the stomach was moderately distended with fluid. Upon removal of the ligated stomach, the esophagus was found to have an irregular patchy discoloration, but the duodenum did not appear unusual. The liver showed moderate vascular congestion only. The spleen was approximately twice its normal size. It was relatively firm in consistency and of purple color. The kidneys showed intense vascular congestion. The plural cavities contained a barely perceptible amount of slightly blood-tinged serous fluid. The lungs showed intense vascular congestion, with the cut surfaces oozing dark red to purple blood. The mucous membranes of the bronchi were congested. The heart showed some degree of dilation of the right auricle and ventricle and was filled with dark blood. Throughout the entire dissection the blood was found to have remained liquid and dark red in color. Histological examination of the various organs did not reveal anything specific other than the intense vascular congestion described.

The stomach content was examined for its anticholinesterase activity. The test was made by determining the inhibitory effect on human red blood cell cholinesterase activity by dilutions of the stomach content. It was found that approximately 100% inhibition took place in dilutions of the stomach content up to 1 to 100. In dilutions of 1 to 1,000 the inhibition was approximately 50%, and in dilutions of 1 to 10,000 the inhibitory effect was approximately 25%. Several routine gastric specimens were used as controls. None of these showed any anticholinesterase activity. It is believed that the magnitude of the inhibitory effect of the gastric contents strongly indicates that the boy swallowed some of the tetraethylpyrophosphate, in spite of his statement to the contrary.

SUMMARY

A case of poisoning is described in which the symptoms conformed to the effects of a substance with anticholinesterase activity. Tests on the stomach content proved the presence of a strong cholinesterase inhibitor indicating that death had occurred as a result of the accidental ingestion of tetraethylpyrophosphate. The poison proved fatal in less than five minutes.

100 High St. (Dr. Klendshoj).

From the Division of Toxicology, University of Buffalo, School of Medicine, the Laboratories of the Buffalo General Hospital, and the Portsmouth Hospital.

1. *Metcalf, R. L.*: The Mode of Action of Organic Insecticides, Review no. 1, National Research Council, Chemical-Biological *Coordination* Center, 1948, p. 71.

2. *Lehman, A. J.*: The Toxicology of the Newer Agricultural Chemicals, Bulletin of the Association of Food and Drug Officials, vol. 12, no. 3 (July) 1948.

3. Faust, J.: *Poisoning Due* to Tetraethylpyrophosphate, J. A. M. A. **141**: 192 (Sept 17) 1949.

Radioiodine in Hyperthyroidism.—The radioactive iodine therapy of hyperthyroidism is controllable, predictable, and successful. Its principal disadvantage is the possible hazard of late carcinogenesis. What this hazard is, is not known. The facts essential for critical decision are not as yet available. The therapy is, therefore, to be reserved for patients in whom late carcinogenesis will not become a question or in whom the disadvantages of another therapy outweigh the possibility of late carcinogenesis. . . .

A criterion for therapy in all patients is that they be available for long-term follow-up and that they be able to co-operate in the follow-up program without anxiety being aroused. It is the responsibility of the clinic to follow all patients through the twenty-five-year period until the problem of the late hazard of the irradiation has been eliminated or determined.—Oliver Cope, M.D., Diseases of the Thyroid Gland, *New England Journal of Medicine,* March 13, 1952.

SPONTANEOUS CHYLOPNEUMOTHORAX

REPORT OF A CASE

Daniel G. Calenda, M.D.
and
Jeffrey H. Harris, M.D., Providence, R. I.

We have recently had the opportunity to follow a case of chylopneumothorax. A review of the literature reveals chylothorax due to any cause to be a rare condition, but we have been unable to find any case of chylopneumothorax in the American or British journals.

REPORT OF A CASE

J. P., a 64-year-old white male odd-job worker, was referred to the Rhode Island Hospital because of chest pain and dyspnea. The patient said he had been in good general health for the previous five years but had had a mild cough productive of about two teaspoonsful of clear phlegm per day that had been present for several years. It had not changed in the past year, and there was no hemoptysis. He stated he had not been exposed to tuberculosis. Three days prior to admission there was a sudden onset of moderately severe substernal and epigastric pain while he was lifting a coal scuttle. He was seen by his family physician. The pain disappeared, and the dyspnea decreased temporarily. The chest pain returned two days later but was milder. It was severer on the right side and was slightly severer on deep inspiration. The dyspnea returned, became progressive, and was associated with some orthopnea. A chest x-ray showed hydropneumothorax.

The patient had no respiratory distress except when lying flat. The temperature was 99.8 F, pulse rate 88, and blood pressure 130/82. The neck was supple without tracheal deviation or cervical venous distention. The chest was increased in anteroposterior diameter. There was decreased excursion of the right hemithorax with slight retraction on inspiration. There was dulness and decreased to absent breath sounds in the lower two-thirds of the right side of the thorax. The apical impulse of the heart was not felt, but the left border of cardiac dulness was found almost at the anterior axillary line. The rhythm was regular and the sounds of good quality; no murmurs were heard. There was no clubbing of the fingers and toes. The results of the remainder of the physical examination were not remarkable.

Laboratory examination revealed 8 to 10 white blood cells in the urine. The hemoglobin was 14.1 gm. per 100 cc.; the red blood cell count was 4,530,000 and the white blood cell count 10,800, with a normal differential count. Blood urea nitrogen was 17 mg., serum protein 8.2 mg., and serum albumin 6.2 mg. per 100 cc. A chest x-ray revealed a moderate right hydropneumothorax with practically complete collapse of the lower and middle lobes. The upper lobe was only partially collapsed, owing to adhesions. The heart and mediastinal contents were displaced slightly to the left. The left lung was clear. Five hundred cubic centimeters of yellow-white fluid was removed by thoracentesis. The specific gravity was 1.020; a smear showed rare red blood cells and white blood cells. The fluid cleared after the addition of ether, and there were small globules found after the fluid was stained with Sudan III. The protein content was 6 gm. per 100 cc.; the fat content was 170 mg. per 100 cc. A cell block was negative for tumor cells. Culture of the fluid was sterile. Results of gastrointestinal examination were normal.

The hospital course was not remarkable. After the initial thoracentesis the dyspnea was markedly relieved. Several more thoracenteses were done in an attempt to remove the remaining fluid and air and thereby reexpand the collapsed lung, but without success. Serial x-rays showed no reaccumulation of fluid. At discharge there was evidence of definite but minimal reabsorption of the remaining fluid; however, no reexpansion of the lung could be demonstrated. Discharge was effected on the 17th hospital day. A follow-up report from the family physician stated that the fluid was not all reabsorbed until 10 weeks after the patient's discharge and at that time the lung had not reexpanded. The patient was feeling well and appeared in good general health.

COMMENT

Yater cited the commonest causes of nontraumatic chylothorax to be (1) compression, invasion, or occlusion of the thoracic duct by metastatic carcinomas and (2) tuberculosis. There remains a third group of unexplained and miscellaneous causes, such as erosion of the duct by an aortic aneurysm, atherosclerosis of the duct with occlusion of the duct by a blood thrombus, lymphangectasis of the duct, and thrombosis of the great veins of the neck.

Considering this patient's course, we are of the opinion that this case represents one of spontaneous chylopneumothorax of unknown cause. It is conjectured that, during the process of lifting, the intrathoracic pressure was elevated and caused a spontaneous pneumothorax. When this occurred, it is conceivable that a collateral of the thoracic duct, of which there are many, was ruptured. A collateral is postulated because of (1) the presence of a relatively small effusion and (2) the failure to recur and subsequent reabsorption.

SUMMARY

A case of apparently spontaneous chylopneumothorax is reported.

From the Department of Medicine, Rhode Island Hospital.

SPONTANEOUS PERFORATION OF COLON IN ABSENCE OF PATHOLOGICAL CONDITION

Mandel Weinstein, M.D.
and
Morton Roberts, M.D., Jackson Heights, N. Y.

Spontaneous perforation of the colon in the absence of a contributing factor, such as disease of the bowel, or hernia, is an occurrence of extreme rarity. Wilensky and Kaufman [1] recorded a case of sudden perforation of the intestine following the lifting of a 150 lb. stone. The presence of an inguinal hernia in their patient was assumed to be the contributing cause. This unusual case afforded them an opportunity to thoroughly review the literature and to include almost every similar case reported up to 1937, a total of 42 cases. In every case uncovered, the perforation was associated with: diverticulitis, prolapse of the rectum, intestinal adhesions, carcinoma and tuberculosis of the bowel, typhoid, hernia, or some other pathological condition. Inguinal hernia was the most frequent accompaniment of spontaneous intestinal perforation. In 1942, Berman and Rosner [2] reviewed the more recent literature and reported another case of rupture of the intestine following severe abdominal strain, thus bringing the study more up-to-date. Their own case as well as the more recent ones they reported occurred in association with inguinal hernia.

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[1] Wilensky, A. O., and Kaufman, P. A.: Subparietal Rupture of the Intestine Due to Muscular Effort: Complication of Hernia, Ann. Surg. **106**: 373 (Sept.) 1937.

[2] Berman, H., and Rosner, H.: Rupture of the Intestine Following Severe Abdominal Muscular Strain, Am. J. Surg. **58**: 137 (Oct.) 1942.

REPORT OF A CASE

J. L., a 63-year-old white man, a baker, was admitted to Boulevard Hospital two hours after having experienced a sudden sharp pain in the abdomen while having a bowel movement. His only previous illness of any significance was mild prostatic hypertrophy accompanied by difficulty in voiding, for which he had undergone a five month course of treatment. In the present instance, the bowel movement had required more than usual straining. The pain throughout the entire abdomen was severe but was not associated with nausea or vomiting. During careful questioning, the patient denied a history of trauma, recent enemas, or the introduction of a foreign body into the rectum.

Examination at the hospital revealed a thin elderly man in a state of partial shock. His temperature was 99 F, pulse rate 90, and respiratory rate 20. A preoperative urinalysis showed only a trace of albumin. Laboratory examination of his blood revealed hemoglobin 16.4 gm. per 100 cc., erythrocytes 5,800,000, leukocytes 9,300 (84% polymorphonuclears with 3 immature forms, 1% eosinophils, 14% lymphocytes, and 1% monocytes). The abdomen was rigid and tense, with tenderness equally distributed throughout. The rectum was normal on examination. A diagnosis of acute diffuse peritonitis was made, and it was decided to operate immediately. At operation the peritoneum was found to be the seat of an intense inflammatory reaction, being reddened, swollen, and edematous, with a large amount of liquid and formed stool spread throughout. The pelvis, particularly, showed segments of dry formed stool. An exploration revealed an intact right colon and appendix. The transverse colon showed the least amount of inflammatory reaction, because of its protective omental covering. There was a perforation about 1 in. (2.54 cm.) in diameter on the antimesenteric surface of the sigmoid flexure, with pouting, everted edges, giving the distinct appearance of a site of exit. The surrounding bowel wall tissue was of normal softness, with no indurated edges. There was no evidence of diverticula. A careful examination of the remaining left colon revealed a normal large bowel wall; however, the colon was greatly distended because of a large amount of hard stool packed in it. The sigmoid colon in particular was overdistended with solid feces. No hemorrhage, ecchymosis, bowel wall edema, growth, or foreign body was seen in any part of the intestines.

The perforation was closed with two layers of fine black silk sutures in the transverse diameter of the sigmoid to avoid narrowing. Because of the immense distention of the left colon by feces, a size 32 French mushroom catheter was placed in the cecum through a stab wound in the right lower quadrant; thus, by effecting decompression of the colon, the suture line of the sigmoid was protected. An effort was made to remove as much of the fecal material as possible, and Penrose drains were inserted down to the pelvis. The abdominal wall was closed with interrupted figure-of-eight wire sutures. Clips were used to close the skin. The patient's condition was good when he was returned to his bed.

Postoperatively, penicillin was administered every 6 hours in doses of 500,000 units, and aureomycin was administered intravenously. The postoperative course was not remarkable, and the patient's temperature for the first five days remained below 101 F. The cecostomy tube was irrigated from time to time and functioned well. On the sixth day, the patient had three involuntary nonformed stools, and from that time he had good bowel patency. His temperature rose to 102 F on the fifth postoperative day, and this was believed to be the result of pneumonitis and a collection of fluid in the right pleural cavity; roentgenograms confirmed this diagnosis. The cecostomy tube dropped out on the 11th day, and the cecostomy wound was almost completely closed when the patient was discharged from the hospital on Aug. 2, 1951, or 26 days after the operation. A follow-up barium roentgen examination of the colon revealed neither diverticula nor a pathological condition in the large intestine.

Up to the present time, only one other case of spontaneous colon perforation similar to this one has been reported in the literature. In January, 1944, Brown[3] reported the case of a 30-year-old male patient who, a few minutes after arising in the morning, experienced a pain in the hypogastrium that was so severe he rolled on the floor in agony. He had had no relevant symptoms in the past. Physical examination revealed a cold, clammy, cyanotic patient, with generalized board-like rigidity of the abdomen and diffuse tenderness. Laparotomy disclosed a small quantity of feces in the pelvis issuing from a laceration 1 cm. in length on the antimesenteric border of the pelvic colon. The surrounding intestinal wall was normal, and no diverticula were present; this was confirmed by a barium enema. Convalescence was stormy, but the patient recovered in six weeks. This case is unusual in that no cause for the perforation was mentioned, not even straining at stool, and no mention was made of the presence or absence of hernia. The author stated that, in a search of the literature, he had failed to find a similar case.

SUMMARY

A case of spontaneous perforation of the colon, which was caused by straining at stool, in a severely constipated patient is reported. No underlying cause, such as trauma, diverticula, or hernia, was discovered. Such a condition was present in every case reported in the literature. Only one other similar case has been reported.

75-17 Forty-First Ave.

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3. Brown, J.: Spontaneous Perforation of the Pelvic Colon, Brit. J. Surg. 31: 307 (Jan.) 1944.

FLOW REGULATOR FOR INTRAVENOUSLY ADMINISTERED FLUIDS

David Feldman, M.D., St. Louis

The rapidity of infusion of parenterally administered fluids is controlled by means of an adjustable clamp attached to the compressible tubing through which the solution flows, and the flow rate is usually gaged by observation of the rate at which drops of the solution pass through a drip apparatus. With the conventional types of clamps in general use, rates of flow of more than about 40 or 50 drops per minute are readily attainable with the required degree of accuracy. However, at slower flow rates, a slight adjustment of the tubing clamp may make so great a difference in the rate at which solution passes through the drip apparatus that accurate regulation may be a tedious procedure. The slower the flow rate, the more difficult the regulation. Since rates of 30 drops per minute or less are sometimes necessary, for example in the intravenous administration of corticotropin, histamine, or arterenol, it seemed desirable to devise a means of adjusting slow flow rates more easily and efficiently than was possible with conventional tubing clamps. For this purpose a special clamp was designed with a coarse

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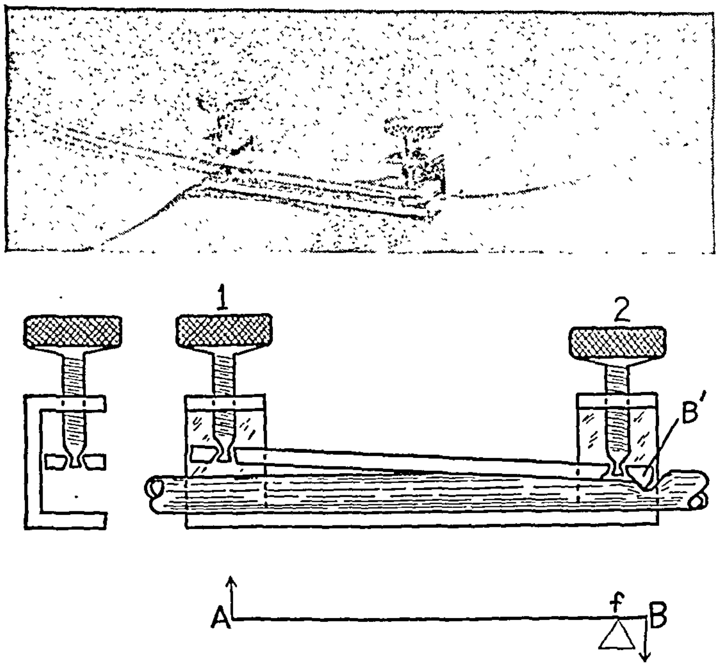
From the Department of Internal Medicine, Jewish Hospital of St. Louis.

and fine adjustment somewhat analogous to the coarse and fine adjustments of a microscope.

The clamp, as may be seen in the accompanying figure, is a modification of an ordinary C-clamp. It consists of a movable bar that can be approximated to a stationary bar by means of two adjustable knurled thumb screws. The latter screws are attached close to either end of the movable bar by loose rivet joints. The operation of the clamp is as follows: The tubing of the fluid set is placed lengthwise between the movable and stationary bars, and, with the thumb screw labeled 1 tightened to a position about halfway to the stationary bar, thumb screw 2 is tightened. The tubing is thus compressed between the small downward projection (B') of the movable bar and the stationary bar. The tightening of screw 2 is continued until a rate of flow (measured in drops per minute) is reached that is somewhat more rapid than that desired. The exact point at which tightening of screw 2 is stopped is of no importance. All further adjustments are made with screw 1, which is now loosened (i. e., the movable and stationary bars are moved apart). When screw 1 is adjusted, the movable bar acts as a lever, moving about the point of attachment of screw 2 as a fulcrum, so that as screw 1 is loosened, increased compression of the tubing occurs between the downward projection of the movable bar and the stationary bar. As is indicated in the lever diagram in the accompanying figure, movement at the point of compression of the tubing is reduced in comparison with movement at the point of attachment of screw 1 by the sizeable ratio of *fB*:*Af*. As screw 1 is loosened, the very gradual increase in compression of the tubing permits easy adjustment of slow flow rates.



Front and side views of the clamp. See text for explanation of the mode of operation of the clamp and for the meaning of the lever diagram.

SUMMARY

A description is given of a tubing clamp designed for easy regulation of slow infusion rates of parenterally administered fluids. This is accomplished by a simple lever arrangement permitting very gradual compression of the tubing through which the fluid flows.

539 N. Grand (3).

MOLDED LUCITE® SURGICAL INSTRUMENTS

Frank T. Padberg, M.D., Chicago

At the suggestion of Dr. Loyal Davis, I have designed several instruments made of molded methyl methacrylate resin (lucite®) for use in neurosurgical operations. These include brain retractors, S-retractors, spoons, and a small mallet (fig. 1, 2, and 3). Lucite® is available in transparent sheets in a variety of thicknesses, 0.06 to 0.25 in. (0.15 to 0.64 cm.). I have found the 0.125 in. (0.32 cm.) thickness to be the most desirable for making the retractors and spoons. Lucite® is also obtainable in cylinders, which were used in making the mallet.

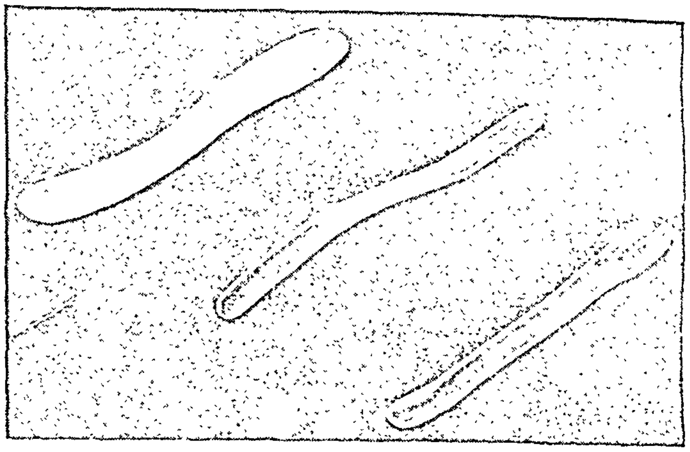


Fig. 1.—Large (left) and small (middle) lucite® S-retractors and a large lucite® spoon.

The patterns for the retractors and spoons were initially cut from the sheets of lucite® with a band or jig saw, much as such patterns would be cut from plywood. Since lucite® becomes soft and is easily molded when heated, these patterns were heated and then molded into the desired shapes. The brain retractors were molded over a heated, square metal surface and the spoons and S-retractors over heated, curved metal surfaces. Immediately after molding, the instruments were placed in water at room temperature for hardening. In this procedure, care must be taken to avoid overheating the lucite® over an open flame, because it will ignite. The mallet was cut from pieces of cylindrical resin and worked with a lathe. The cut edge of lucite,® which is rough and sharp, was

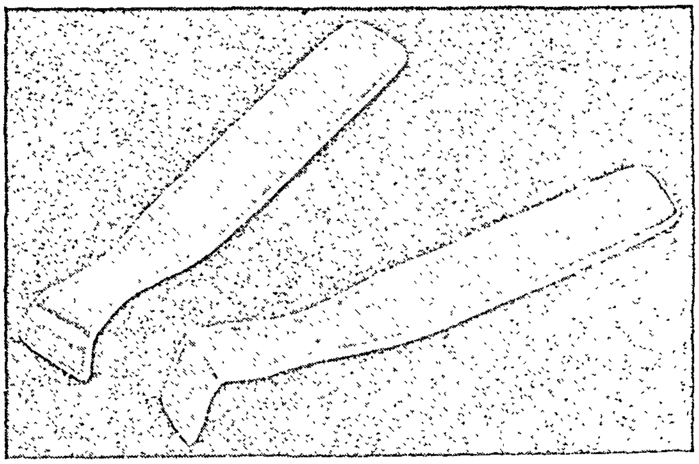


Fig. 2.—Lucite® brain retractors.

Fellow in Neurological Surgery, Department of Surgery, Northwestern University Medical School.

rounded and smoothed, first with an ordinary metal file, then with a disc sander, and finally with fine sandpaper. The edges were polished with a flannel polishing wheel.

These plastic instruments are superior in many ways to their metal counterparts. They are inexpensive and easy to make. The plastic retractor has a smooth surface with rounded edges, which protects the brain when it is retracted; furthermore, the lucite® is transparent, and the underlying cortex and white matter can be seen. Light is poorly reflected from the surface of this material, and it does not conduct the electrocoagulating current. These retractors are light in weight, easily handled, and yet sufficiently strong to gently retract the brain. The brain retractors were made in pairs of different sizes, having depths of 0.25 in. (0.64 cm.), 0.50 in. (1.27 cm.), 0.75 in. (1.91 cm.), 2.5 in. (6.35 cm.), and 3 in. (7.62 cm.). The plastic mallet is light in weight, and the intensity of the blow is much more easily controlled than it is with other types, such as when the mallet is used in removing the bony prominence that sometimes obscures the foramen ovale and the mandibular division of the fifth nerve during a trigeminal sensory root section. The plastic spoon is particularly useful for palpating the cortex, and the color of the underlying cortex can be distinctly seen. Large and small S-retractors and spoons were made. These lucite© instruments are sterilized by immersion in a 1:100 solution of benzalkonium (zephiran®) chloride for 20 minutes. The instruments are durable; one set has been in continuous use for over four years.

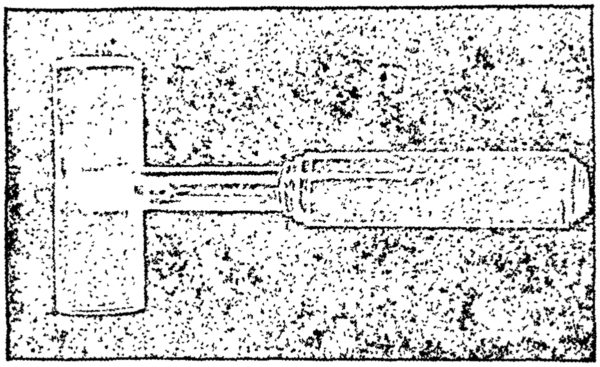


Fig. 3.—Small lucite® mallet.

303 E. Chicago Ave.

Diagnosis of Gastric Cancer.—One must not be satisfied with a report from the radiologist of "no evidence of gastric cancer or obstruction." Remember that obstruction and shadow evidence of gastric cancer occur *late*. The x-ray fails to reveal a small lesion unless it is significantly ulcerated, fungated or happens to appear on the silhouette margin of the picture. The suspicious signs which you must ask your radiologist to report are those of thickening or hypertrophy of the rugae or decreased or asymmetric peristaltic activity of the different portions of the stomach. We have seen a patient whose only complaint was slight indigestion and whose repeated gastrointestinal x-ray examinations were negative except for "slight delay in gastric peristalsis and moderate hypertrophy of the rugae" for a period of six months at which time the symptoms were definite. Diagnosis of carcinoma of the stomach was readily made by x-ray and the patient was found inoperable. Exploration at the time of the first report of slight changes in the function and structure of the stomach might have resulted in successful radical removal.—George Z. William, M.D., Early Diagnosis of Gastric Carcinoma, *Virginia Medical Monthly*, May, 1952.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

APPARATUS ACCEPTED

The following additional products have been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

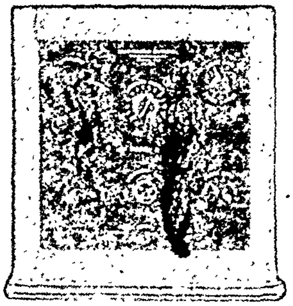
RALPH E. DE FOREST, M.D., *Secretary*.

Batrow Neuromuscular Stimulator, Model B

Batrow Laboratories, Inc., R. F. D. 1, Branford, Conn.

The Batrow Neuromuscular Stimulator, Model B, is essentially a generator of condenser discharges which follow each other with a frequency that varies from approximately one pulse per 1.5 seconds to about 45 pulses per second depending on pulse rate dial settings. The frequency can be reduced so that individual muscular twitches are elicited, or it can be increased until the twitches fuse into a sustained, smooth tetanic contraction. The distinctive feature of the apparatus is the glass, gas-filled electrodes in which a visible glow accompanies the discharge.

Model B, unpacked, measures 41 (height) by 36 by 38 cm. (16 by 14 by 15 in.) and weighs 13 kg. (28 lb.). Packed for shipment it measures 41 by 41 by 46 cm. (16 by 16 by 18 in.) and weighs 16 kg. (35 lb.). The shipping weights include a movable applicator, a set of "fasten-on return" (dispersive) electrodes, a "footplate return" (dispersive) electrode, and a set of return leads. Further accessories not included in the shipping weights are a stationary applicator with connector cable and a motor point applicator. For operation the device requires a 60-cycle alternating current at 110 to 120 volts, and it draws about 75 watts. In general appearance the present Model B does not differ essentially from the Model A.



Batrow Neuromuscular Stimulator, Model B

The evidence obtained in connection with this device indicates, in the opinion of the Council, that the device has merit in electrotherapy as a neuromuscular stimulator, but only for muscles possessing a normal nerve supply. There was no convincing evidence indicating that the device was useful for diagnostic purposes or for the stimulation of paralyzed muscles.

The Council voted to include the Batrow Neuromuscular Stimulator, Model B, in its list of accepted devices as a device for stimulating muscles with a normal nerve supply.

Micronic Hearing Aid, Model "Mercury"

Audivox, Inc., Successor to Western Electric Hearing Aid Division, 123 Worcester St., Boston 18.

The Micronic Hearing Aid, Model "Mercury," is an electric hearing aid for air and bone conduction. Conventional in shape, size, and general design, it is housed in a metal case that measures (excluding controls, hinge, catch, and decoration of microphone grille) 81 by 45 by 18 mm. With batteries, receiver, and cord it weighs 104 gm.

Evidence from an acceptable laboratory showed that this instrument met the published requirements of the Council for hearing aids. The Council on Physical Medicine and Rehabilitation voted to include the Micronic Hearing Aid, Model "Mercury," in its list of accepted devices.

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FELLOWSHIP ABOLISHED

At the recent meeting in Chicago, the House of Delegates voted to have only one class of membership; hence Fellowship in the Scientific Assembly has been eliminated. The symbol after the names of Fellows appearing in the Directory and elsewhere will now appear after the names of active members in the American Medical Association.

ESTABLISHING THE TIME OF UNWITNESSED DEATH

Although the fact of death is undeniable and inalterable, establishing the time of death of persons found dead is another matter; it is not always so easily determined as would seem to be implied by a wide reading of today's fast-paced "whodunits." According to Moritz,[1] establishing the time of unwitnessed death is important for two reasons. In one instance, evidence against a suspect is strengthened greatly if death can be proved to have taken place at a specified time, whereas innocence is implicit if it has occurred at another time, while in civil matters establishing the time of death is often a decisive factor in settlement of an insurance claim or in determination of inheritance.

Death cannot be considered certain unless the heart has stopped beating for at least five minutes. Cessation of breathing alone does not provide conclusive evidence of death, since the heart may continue to beat thereafter for many minutes. Even though listening to the heart with a stethoscope is usually reliable, this procedure can occasionally result in an incorrect opinion. The only completely dependable way to determine whether the heart has stopped beating is to obtain evidence supplied by an electrocardiograph.

Two general methods exist for determining the length of time that has elapsed since death. The first, referred to as the rate method, depends on recognition of the extent of certain postmortem changes; the second, known as the association method, depends on sequential relationships between the time of death and events happening at a known time.

Immediately after death a series of physical and chemical changes take place, and these continue in more or less orderly sequence until the remains disintegrate. They consist of cooling of the body; gravitation of blood to the skin of the dependent parts; initial relaxation of muscles followed by a brief period of stiffening and then a return to flaccidity; a series of measurable chemical changes in the blood and tissues; and, finally, the development of putrefaction and autolysis.

Following death, the rate of cooling of the body is modified by such factors as body temperature at the time of death, surface area in relation to weight and clothing, and the temperature and conductivity of materials and air with which the body is in contact. Hence the body of a slender person cools with greater rapidity than does the body of an obese person, and the residual temperature of the body of one who had fever at the time of death is higher than that of a person whose temperature was subnormal. A rough formula for establishing the time of death, which is derived from knowledge of the internal temperature of the body at a given time, reads as follows:

$$\frac{98.6\text{ F} - \text{Rectal Temperature}}{1.5} = \text{Number of hours that have elapsed since death.}$$

Gravitation of blood to the skin of the dependent parts of the body provides a light hue initially and then a dark blue hue, reaching a maximum intensity 8 to 12 hours after death. Postmortem lividity develops with greater rapidity and is more intense in persons dying of heart disease than is the case of those who succumb suddenly as a result of violence. Muscular rigidity occurring in previously normal adults who lived in an average environmental temperature is usually perceptible within two to four hours after death; muscular flaccidity reappears within 24 to 36 hours. Chemical changes evolve in a more or less orderly fashion. Sugar in the blood, for example, is destroyed gradually and during the first six hours falls at the rate of 6 to 10 mg. per 100 cc. of blood per hour. The blood potassium level rises sharply during the agonal period if death is preceded by severe asphyxia or circulatory failure and then remains relatively stable until 12 to 24 hours have elapsed.

The rate at which putrefaction becomes apparent varies enormously. Persons previously ill with infection or congestive heart failure putrefy more rapidly than those who were in good health before death. Newborn infants are notoriously slow to evince putrefactive change, while persons found in an environment with a temperature more than 80 F reveal well-advanced putrefactive change after 12 to 18 hours. In a milieu of cold air or water, months may elapse before the body reveals significant putrefaction. Occasionally, the entomologist is able to supply information about the time of unwitnessed death after studying forms of insect life that attack the dead body.

In general, estimation of the time of unwitnessed death should be based on cumulative, available evidence rather than on a single observation. Association of death with some timed event is presumably more reliable, and evidence derived by means of association is often more satisfactory than that gained by attempting to establish the time of death by postmortem findings. Yet the former method, too, has shortcomings. Acceptance at face value of statements made by witnesses regarding the time they last saw the decedent alive is fraught with unreliability.

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[1] Moritz, A. R.: Scientific Evidence in Establishing the Time of Death, Ann. West. Med. & Surg. 6: 302 (May) 1952.

LIGATION OF THE INFERIOR VENA CAVA IN CARDIAC DECOMPENSATION

Cossio and Perianes [1] of Buenos Aires suggested in 1948 two types of surgical intervention for the relief of the overburdened pulmonary venous system in cardiac decompensation. One type consisted of a procedure in which the blood from the pulmonary venous system was shunted to some sector of the systemic circulation by an anastomosis of a large pulmonary vein with the axillary vein, the splenic vein, or the azygos vein. The second type had for its objective the reduction of the right ventricular output either by means of a tricuspid valvulotomy resulting in tricuspid regurgitation or by means of ligation of the inferior vena cava.

Cossio and Perianes performed vein anastomoses in dogs and also valvulotomies utilizing the jugular vein approach. When valvulotomy was successful, the systolic pressure in the right ventricle fell to approximately 50% of its initial pressure, while it rose only 1 mm. Hg in the right auricle and in the superior vena cava. The systemic pressure in the right ventricle rose later but did not return to the original values, remaining 20 to 30% lower.

Cossio and Perianes subjected five patients with more or less intractable cardiac decompensation to a tricuspid valvulotomy employing the internal jugular vein approach. While the immediate results were gratifying, only one of the patients was alive five months later.

In 1950, Cossio [2] reported on 90 patients in whom ligation of the inferior vena cava was performed for severe cardiac decompensation. The ligation of the inferior vena cava proved to be a more serious operation than the tricuspid valvulotomy, but it was more effective because it permitted the surgeon to see the field of operation and because the procedure constituted at the same time a prophylactic measure against pulmonary embolism. The surgical mortality in the first 20 patients operated on was 25%; in the remaining 70 patients the mortality was reduced to 6%. Early improvement, sometimes very dramatic, was observed in 70% of the patients and was maintained for months, provided medical treatment was continued. The early improvement, the author felt, was due to the diminished amount of blood returning to the heart and the later improvement to the formation of a pool of blood with a slower return in the recumbent position.

Legrand and his co-workers [3] performed ligation of the inferior vena cava below the renal veins in 10 patients with intractable cardiac decompensation. Of these patients, only three were alive a year and a half, one year, and one year and 10 months, respectively. The authors felt that the results were far from being spectacular. They believed, however, that if the operation were performed in less advanced cases, the results, even though purely palliative, would probably be worth while.

d'Allaines and his co-workers [4] operated on 14 patients with mitral stenosis and 2 patients with hypertensive cardiopathy. There was one immediate death; in nine patients phlebitis developed despite heparinization. The immediate results were gratifying. The patients experienced a sense of well-being immediately after the operation. There was no dyspnea even in the recumbent posture; the pulse became slower and stronger. Roentgenograms demonstrated diminution in size of the cardiac shadow and clearance of the pulmonary infiltrations. However, the improvement lasted only three months in three patients. In 11 patients the results were good at the end of six months, and a few of these were able to resume some activity. These authors felt that ligation of the inferior vena cava below the renal veins was the operation of choice in decompensated hearts with pulmonary stasis. The ligation has the effect of retarding the return of venous blood from the lower limbs and the pelvic viscera toward the heart by compelling it to travel over the longer and narrower route of the collateral circulation. The return venous circulation of the liver and kidneys was improved. Excretion of water and salt was increased with resulting diminution of the total blood volume. These effects were usually accompanied by an objective improvement in the symptoms and paradoxically by the disappearance of the previously existing edema of the lower extremities. The indications for the operation were constituted principally by failure to respond to rest, digitalization, salt-free diet, and mercurial diuretics. Phlebitis of lower extremities, particularly when bilateral, constituted a contraindication to ligation.

Donzelot and his associates [5] reported on 50 patients with severe cardiac decompensation in whom they performed ligation of the inferior vena cava. There were 38 with mitral lesions, 9 with hypertension, 2 with aortic lesions, and 1 with myocardial infarction. Ten of the patients died within the first two postoperative weeks. Immediate satisfactory results were obtained in 38 of the 40 surviving patients. Thirty-three patients showed a significant and more persistent improvement during the follow-up period of 4 to 17 months. Twenty-one of the 33 were able to lead fairly normal lives. Nine patients died within 3 to 13 months after the operation. The best results were obtained in patients with cardiac decompensation who still responded to rest and medical therapy. Lian and his co-workers [6] performed ligation of the inferior vena cava on 15 patients with cardiac decompensation. There was no operative death. One patient died three weeks after operation; three patients died within the first three postoperative months; and three additional patients died three, five, and nine months, respectively, after the operation. Satisfactory late results were obtained in only six patients. These results, as well as those of other workers, suggest that, while the operation results in immediate improvement, this will be followed by a 50% mortality in the first six months. The results so far recorded suggest that at best the operation should be regarded as a palliative measure with decided limitations.

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1. Cossio, P., and Perianes, I.: Surgical Treatment of the "Cardiac Lung": Ligation of the Inferior Vena Cava and/or Tricuspid Valvulotomy, J. A. M. A. **140**: 772-776 (July 2) 1949.

2. Cossio, P.: Ligation of the Vena Cava in the Treatment of Heart Failure, Am. Heart J. **43**: 97-102 (Jan.) 1952.

3. Legrand, Vandecasteele, Merlen, and Desruelles: L'opération de Cossio (ligature de la veine cave inférieure dans les cardiopathies décompensées): A propos de 10 observations, Lille chir. **33**: 111-117 (May-June) 1951.

4. d'Allaines, F., and others: Essai de traitement des cardiopathies décompensées par la ligature de la veine cave inférieure, Mém. Acad. de chir. **75**: 791-799 (Nov.-Dec.) 1949.

5. Donzelot, E., and others: Résultats de la ligature de la veine cave inférieure dans 50 cas d'insuffisance cardiaque irréductable, Arch. d. mal. du coeur **44**: 239-262 (March) 1951.

6. Lian, C.; Welti, H., and Morgenthaler, F.: Remarques sur la ligature de la veine cave inférieure dans l'insuffisance cardiaque: Résultats, indications et contre-indications, Presse méd. **60**: 313-315 (March 5) 1952.

ORGANIZATION SECTION

OMISSION IN REPORT OF COMMITTEE ON BLOOD BANKS

The following final paragraphs were omitted, in error, from the report of the Committee on Blood Banks printed in The Journal June 28, pages 874-875:

The Office of Defense Mobilization has responsibility for striking a balance between civil and military needs in the allocation of "critical" items. Blood and blood derivatives have been placed on the "critical" list.

6. *Blood Derivatives.*—The Committee is keeping abreast of developments in the use of blood fractions. Animal experiments have indicated the desirability of determining whether human gamma globulin is of any value in the control of poliomyelitis in man. Field studies are now being carried out by Dr. William McD. Hammon and his group to determine whether protection can be demonstrated against naturally occurring poliomyelitis in children, and, if so, under what conditions. The results of the pilot human field trials of last summer were inconclusive, due to the very limited numbers of cases occurring in the observed population. Additional field trials will be conducted this summer.

7. *State Committees on Blood Program.*—The importance of the formation of state committees on blood program as previously recommended is again emphasized. Your committee has under study plans for strengthening and greatly increasing the usefulness of these state committees. The Committee hopes to announce these plans not later than the next meeting of the House of Delegates.

8. *Resurvey of Blood Banks.*—Responding to the action of the House in June 1950, the Committee through the Bureau of Medical Economic Research will this fall commence a new survey of the blood banks of the nation. For the purpose of this study the definition of a blood bank will be revised to include only facilities in which donors are bled and blood is stored for a period of days.

The cooperation of physicians in blood banks is greatly needed in making sure that the schedules are accurately filled out and promptly returned.

Respectfully submitted,

Leonard W. Larson, Co-Chairman
Herbert P. Ramsey, Co-Chairman
James Q. Graves
John W. Green
Deering G. Smith
James Stevenson
William D. Stovall
Frank E. Wilson, Secretary

MEDICAL ASPECTS OF CIVIL DEFENSE

The Council on National Emergency Medical Service has just completed the publication of the booklet entitled "Medical Aspects of Civil Defense," which contains the series of articles sponsored by the Council and published in The Journal during the past year. Many requests have been received for the booklet, which sells for 25 cents a single copy, and 20 cents a copy for orders of 100 or more. Orders should be sent to the Council on National Emergency Medical Service, 535 N. Dearborn, Chicago 10.

MINUTES OF THE SCIENTIFIC SECTIONS

SECTION ON ANESTHESIOLOGY

Tuesday, June 10—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Stevens J. Martin, Hartford, Conn.

A paper entitled "Evaluation of Trichlorethylene as an Anesthetic and Analgesic Agent," by Drs. William K. Nowill and C. Ronald Stephen, Durham, N. C., and Paul W. Searles, Buffalo, was read by Dr. Nowill. This paper was discussed by Drs. Charles M. Barbour, Hartford, Conn.; Scott M. Smith, Salt Lake City, and William K. Nowill.

A paper entitled "Studies on Resuscitation: An Experimental Evaluation of the Bloxsom Air-Lok," by Drs. Virginia Apgar, New York, and Joseph Kreiselman, Washington, D. C., was read by Dr. Apgar. This paper was discussed by Drs. Ivan B. Taylor, Detroit; Stuart C. Cullen, Iowa City; Nicholson J. Eastman, Baltimore; Paul W. Searles, Buffalo; L. F. Schuhmacher, Houston, Texas; Charles M. Barbour, Hartford, Conn.; Alvan L. Barach, New York; H. F. Helmholz Jr., Rochester, Minn., and Virginia Apgar.

Dr. Alfred H. Iason, Brooklyn, read a paper entitled "Postoperative Pain Control," which was discussed by Drs. Charles D. Anderson, Chicago; Paul H. Lorhan, Kansas City, Kan.; R. V. Gorsch, New York, and Alfred H. Iason.

A paper entitled "Continuous Procaine Blockade of the Paravertebral Sympathetic Ganglia: Observations on 100 Patients," by Drs. Albert M. Betcher, George Bean, and Daniel Casten, New York, was read by Dr. Betcher, and was discussed by Drs. John Adriani, New Orleans; Lawrence D. Ruttle, Joliet, Ill., and Daniel Casten.

Dr. Daniel C. Moore, Seattle, read a paper entitled "Sciatic and Femoral Nerve Block," which was discussed by Drs. Max S. Sadove, Chicago; A. B. Stearns, Detroit, and Daniel C. Moore.

Dr. John J. Bonica, Tacoma, Wash., read a paper entitled "The Role of the Anesthesiologist in the Management of Intractable Pain." This paper was discussed by Dr. Harold F. Bishop, Valhalla, N. Y.

Wednesday, June 11—Afternoon

The following officers were elected: chairman, Dr. R. J. Whitacre, East Cleveland, Ohio; vice chairman, Dr. Virginia Apgar, New York; secretary, for three years, Dr. John S. Lundy, Rochester, Minn.; delegate, for two years, Dr. Henry S. Ruth, Philadelphia; alternate delegate, for two years, Dr. Edward B. Tuohy, Washington, D. C.

Dr. Henry S. Ruth, Philadelphia, reported on the activities of the House of Delegates.

Dr. R. J. Whitacre, East Cleveland, Ohio, reported as representative to the American Board of Anesthesiology.

Dr. John S. Lundy, secretary, read a letter announcing the election of Dr. Stuart Cullen as a director of the American Board of Anesthesiology.

Dr. A. William Friend, Akron, Ohio, reported on anesthesia meetings held in Paris, France, in September, 1951.

Dr. Lundy reported on action taken by the executive committee disapproving two resolutions, presented at the Clinical Session of the American Medical Association in Los Angeles in December, 1951, concerning defraying the expenses of delegates in traveling to sessions and the make-up of the executive committee.

Mr. John Hunt, executive secretary of the American Society of Anesthesiologists, spoke on the merits of a proposed insurance program.

A paper entitled "Cardiac Asystole," by Drs. Mary Lou Buckley, Kenneth K. Keown, and Henry S. Ruth, Philadelphia, was read by Dr. Ruth, and was discussed by Drs. Donald E. Hale, Cleveland; V. K. Stoelting, Indianapolis; Ralph T. Knight, Minneapolis, and Kenneth K. Keown.

A paper entitled "The Treatment of Hiccups," by Drs. Albert F. Gigot, Boston, and Paul D. Flynn, Waltham, Mass., was read by Dr. Gigot, and was discussed by Drs. W. Allen Conroy, Chicago; Joe DePree, Grand Rapids, Mich., and Albert F. Gigot.

Dr. Stevens J. Martin, Hartford, Conn., presented the chairman's address, entitled "Anesthesiology: A Challenge."

Dr. John A. Paulson, Rochester, Minn., read a paper entitled "Pentothal-Ether Anesthesia," which was discussed by Drs. Mary Karp, Chicago; Charles F. Jones, Toledo, Ohio., and John A. Paulson.

A paper entitled "The Use of Synthetic Muscle Relaxants in Anesthesiology," by Drs. Francis F. Foldes, Theodore S. Machaj, and Robert D. Hunt, Pittsburgh; Phil C. Carberry, Irvington, N. J., and Pearl G. McNall, Pittsburgh, was read by Dr. Foldes.

A paper entitled "Experience with the Use of Curare Since 1943 in a Large Western Community," by Drs. B. M. Anderson, Oakland, Calif.; E. E. Brinckerhoff, Berkeley, Calif., and E. H. Case, F. E. Davis, and F. M. Thornburg, Oakland, Calif., was read by Dr. Anderson.

These two papers were discussed by Drs. Henry K. Beecher, Boston; Lloyd E. Larrick, Cincinnati; J. Everett McClenahan, Pittsburgh; Ralph T. Knight, Minneapolis; Charles Paul Boyan, New York, and Francis F. Foldes and B. M. Anderson.

THURSDAY, JUNE 12—MORNING

A joint meeting was held with the Section on Diseases of the Chest. The proceedings are reported in the minutes of that section.

SECTION ON DERMATOLOGY AND SYPHILILOGY

TUESDAY, JUNE 10—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Francis W. Lynch, St. Paul.

Dr. James R. Webster, Chicago, read a report as section representative to the Scientific Exhibit.

Dr. Harry R. Foerster, Milwaukee, gave the report of the Committee on Occupational Dermatoses, as follows:

REPORT OF THE COMMITTEE ON OCCUPATIONAL DERMATOSES

The Joint Committee on Occupational Dermatoses of the American Medical Association, Section on Dermatology and Syphilology, and the American Dermatological Association, met on Dec. 12, 1951, in Chicago. The members present agreed unanimously on reorganization. This committee has usually met annually and in recent years only at meetings of the Academy of Dermatology and Syphilology, where most members were usually available. It was therefore proposed that a new committee be formed to represent the American Medical Association, the American Dermatological Association, and the Academy of Dermatology and Syphilology, such committee to consist of two representatives from each of the three organizations of dermatologists. The Society for Investigative Dermatology was not included in this group because its membership is not restricted to dermatologists.

The original committees were set up to promote and advance information on and education and research in the field of occupational dermatology, particularly industrial dermatology, and to establish a clearing house within the structure of the American Medical Association for collection and dissemination of information in this field. Promotion of the latter objective was contributory to the establishment of the American Medical Association Council on Industrial Health. Since then this committee has functioned primarily in an advisory capacity to the Council and has also cooperated with the Office of Dermatoses Investigations of the United States Public Health Service. The former head of that group is a member of the committee.

At the December 12 meeting the following motion was made by Dr. Marion Sulzberger and seconded by Dr. C. Guy Lane: "It is moved that the Council on Industrial Health of the American Medical Association be requested to appoint a Standing Committee on Occupational Dermatoses; that this Committee be a joint responsibility of the Section on Dermatology of the Scientific Assembly of the American Medical Association, the American Academy of Dermatology and Syphilology, and the American Dermatological Association, each of these groups to be represented by two members; that each of these organizations is to submit names of proposed representatives to the Council on Industrial Health for selection and approval; that representatives of public agencies be invited to sit as ex-officio members of the committee as the situation requires; and that the function of this committee be advisory in nature to the Council on Industrial Health and the details of organization be worked out with the Council on Industrial Health." This motion was discussed by all present and unanimously approved. No stipulation was made as to the tenure of office of appointees and as regards staggering of services, but it was thought that this had best conform with American Medical Association practices with reference to similar committees of other councils.

At this time, in reporting the retirement of the present Committee on Occupational Dermatoses and the resignation of its officers, I wish to present the following motion for your consideration and action: "It is moved that the Section on Dermatology and Syphilology of the American Medical Association approve the motion adopted by its Occupational Dermatoses Committee at its meeting of Dec. 12, 1951, and that the chairman of this section be hereby authorized to make the necessary committee appointments subject to approval of the American Medical Association Council on Industrial Health."

In presenting this final report as chairman I wish to express my appreciation and thanks to members of the committee for their diligent, conscientious and efficient services, over the years, in the interest of industrial dermatology. In expressing to this section and to the American Dermatological Association my appreciation of the privilege and honor of having served on this committee, I believe I may speak in a similar vein in behalf of the other members.

Respectfully submitted,

CHARLES C. DENNIE
JOHN G. DOWNING
JAMES R. DRIVER
FLETCHER HALL
JOSEPH KLAUDER
C. GUY LANE
EDWARD A. OLIVER
EARL OSBORNE
SAMUEL PECK
LOUIS SCHWARTZ
MARION SULZBERGER
LEONARD WEBER
HARRY R. FOERSTER, Chairman.

Dr. Francis W. Lynch, St. Paul, read the chairman's address on "Pruritis Vulvae."

Drs. John F. Madden and Harold G. Ravits, St. Paul, presented a paper on "Enzyme Débridement of Indolent Infected Cutaneous Ulcers," which was discussed by Dr. Davitt A. Felder, Minneapolis.

Drs. Arthur C. Curtis and E. Richard Harrell, Ann Arbor, Mich., presented a paper on "The Association of Dermatomyositis and Malignancy." This paper was discussed by Drs. Ashton L. Welsh, Cincinnati, and Helen O. Curth, New York.

Drs. Harry M. Robinson Jr., Frank H. Figge, and Eugene S. Bereston, Baltimore, presented a paper on "Physiology and Pathogenesis of Microsporon Audouini," which was discussed by Dr. Sture A. M. Johnson, Madison, Wis.

Drs. Otis F. Jillson and Robert Hoekelman, Hanover, N. H., presented a paper on "Further Amplification of the Concept of Dermatophytid," which was discussed by Dr. James H. Mitchell, Chicago.

Drs. Francis A. Ellis and William R. Bundick, Baltimore, presented a paper on "An Appraisal of the Value of the Local Use of Antihistamines." This paper was discussed by Dr. Carl T. Nelson, New York.

WEDNESDAY, JUNE 11—MORNING

The following officers were elected: chairman, Dr. John H. Lamb, Oklahoma City; vice chairman, Dr. Royal M. Montgomery, New York; secretary, Dr. J. Walter Wilson, Los Angeles; delegate, Dr. Robert R. Kierland, Rochester, Minn.; alternate delegate, Dr. Winfred A. Showman, Tulsa, Okla.; representative to the American Board of Dermatology and Syphilology, Dr. George M. Lewis, New York; representative to Scientific Exhibit, Dr. James R. Webster, Chicago.

Dr. Hamilton Montgomery, Rochester, Minn., read a paper on "Benign and Malignant Dermal Neoplasms: Clinical and Histologic Distinction," which was discussed by Dr. Marcus R. Caro, Chicago.

Drs. Boynton H. Booth and Roland W. Jones, Indianapolis, presented a paper on "An Epidemiological and Clinical Study of Grain Itch." This paper was discussed by Drs. Leon Goldman, Cincinnati, and John E. Dalton, Indianapolis.

Dr. William J. Morginson, Salt Lake City, presented a paper on "Tinea Capitis (M. Audouini) Managed with Asterol Dihydrochloride," which was discussed by Dr. Edmond K. Edelson, Newark, N. J.

Dr. Theodore Cornbleet, Chicago, presented a paper on "Keloids Treated with Hyaluronidase," which was discussed by Dr. Allen W. Pepple, Richmond, Va.

Drs. A. H. Conrad Jr., Jerome Greenhouse, and Richard S. Weiss, St. Louis, presented a paper on "Treatment of Pemphigus with Oral Cortisone." This paper was discussed by Dr. John R. Haserick, Cleveland.

Drs. Calvin J. Dillaha and Stephen Rothman, Chicago, presented a paper on "Therapeutic Experiments in Alopecia Areata," which was discussed by Drs. M. J. Reuter, Milwaukee, and S. William Becker, Chicago.

THURSDAY, JUNE 12—MORNING

Dr. Herman Pinkus, Monroe, Mich., presented a paper on "Premalignant Fibroepitheliomatous Tumors of the Skin," which was discussed by Dr. Carl W. Laymon, Minneapolis.

Dr. George L. Waldbott, Detroit, presented a paper on "An Analysis of Patterns in Contact Dermatitis on the Hands." This paper was discussed by Dr. Elmer M. Rusten, Minneapolis.

Dr. John C. Slaughter Jr., Evansville, Ind., presented a paper on "Injection Therapy of Hemangiomas," which was discussed by Dr. D. Truett Gandy, Houston, Texas.

Dr. Lawrence M. Nelson, Santa Barbara, Calif., read a paper on "The Use of Podophyllin in Dermatology." This paper was discussed by Dr. Leslie M. Smith, El Paso, Texas.

Dr. A. J. Reiches, St. Louis, read a paper on "Riehl's Belanosis," which was discussed by Dr. S. William Becker, Chicago.

Drs. Robert J. Morgan, Paul O. Shackelford, and John H. Lamb, Oklahoma City, presented a paper on "Unusual Sunlight Eruptions," which was discussed by Dr. Arthur R. Woodburne, Denver.

SECTION ON DISEASES OF THE CHEST

TUESDAY, JUNE 10—MORNING

The meeting was called to order at 9:20 a. m., by the chairman, Dr. J. Winthrop Peabody, Washington, D. C.

Dr. J. Winthrop Peabody, Washington, D. C., read the chairman's address on "Recent Trends in Diseases of the Chest."

Drs. Leon Unger and Albert H. Unger, Chicago, presented a paper on "The Treatment of Bronchial Asthma."

Drs. H. A. Andersen and C. B. Holman, Rochester, Minn., presented a paper on "Pulmonary Complications of Cardiospasm."

Dr. Carl W. Tempel, Denver, Colo., read a paper on "Present Status of Drugs in Treatment of Tuberculosis."

Drs. Irving J. Selikoff, Paterson, N. J., and Edward H. Robitzek, Staten Island, N. Y., presented a paper on "Treatment of Human Tuberculosis with Hydrazine Derivatives of Isonicotinic Acid."

Drs. M. E. Flipse, Rochester, Minn., and G. A. Hedberg and Victor R. Krueger, Nopeming, Minn., presented a paper on "Water-Soluble Contrast Media for Bronchography."

Drs. C. B. Rabin and Rudolph Kramer, New York, presented a paper on "Juxtacarina Biopsy in Evaluation of Operability of Bronchial Carcinoma."

Drs. Joshua Fields and L. Allen Smith, Los Angeles, and Myron Prinzmetal, Beverly Hills, Calif., presented a paper on "The Wolff-Parkinson-White Syndrome."

WEDNESDAY, JUNE 11—MORNING

The following officers were elected: chairman, Dr. Joseph C. Placak, Cleveland; vice chairman, Dr. Jay Arthur Myers, Minneapolis; secretary, Dr. John F. Briggs, St. Paul; delegate, Dr. Hollis E. Johnson, Nashville, Tenn.; alternate delegate, Dr. Edward W. Hayes, Monrovia, Calif.

Drs. S. A. Slater, Worthington, Minn., and A. L. Vadheim, Tyler, Minn., presented a paper on "Tuberculosis Control in Lincoln County, Minnesota."

Drs. Richard Overholt, J. H. Walker, and F. M. Woods, Brookline, Mass., presented a paper on "Hidden or Unsuspected Bronchiectasis in the Asthmatic."

Dr. Hans H. Hecht, Salt Lake City, read a paper on "Polycythemia and Heart Failure in Chronic Lung Disease."

Dr. Porter P. Vinson, Richmond, Va., read a paper on "The Diagnosis and Treatment of Patients Suffering from Simple Bronchial Erosion with Pulmonary Hemorrhage."

Dr. N. D. D'Esopo, Sunmount, N. Y., read a paper on "Recent Trends in the Treatment of Pulmonary Tuberculosis."

Drs. Alvan L. Barach and Gustav J. Beck, New York; H. E. Seanor, Rye, N. Y., and H. A. Bickerman, New York, presented a paper on "Mechanically Induced 'Coughing' in Poliomyelitis, Bronchial Asthma and Bronchiectasis."

Drs. Reginald H. Smart, Los Angeles; C. K. Davenport, Fontana, Calif., and G. W. Pearson, Los Angeles, presented a paper on "Intermittent Positive-Pressure Breathing in the Treatment of Chronic Pulmonary Diseases."

Thursday, June 12—Morning

Joint Meeting with Section on Anesthesiology

Dr. James J. Waring, Denver, read a paper on "Chest Conditions of Mutual Concern to Chest Specialists and Anesthesiologists." This paper was discussed by Drs. James H. Walker, Brookline, Mass., and Lloyd H. Mousel, Seattle.

Drs. Barnett A. Greene and Samuel Berkowitz, Brooklyn, presented a paper on "The Prevention of Postoperative Pulmonary Complications by a Program Dependent Entirely on the Anesthesiologist." This paper was discussed by Drs. Paul H. Holinger and Willis J. Potts, Chicago.

Drs. J. Maxwell Chamberlain and Charles F. Daniels, New York, presented a paper on "The Relationship of Pain Control to Pulmonary Surgery," which was discussed by Drs. Karl H. Pfuetze, Glenn Ellyn, Ill., and Ralph T. Knight, Minneapolis.

Dr. C. Rollins Hanlon, St. Louis, read a paper on "The Role of Diagnosis and Anesthesia in Surgery of the Heart." This paper was discussed by Drs. Thomas J. Dry, Rochester, Minn., and William O. McQuiston, Peoria, Ill.

Drs. Fred J. Hodges and Robert S. MacIntyre, Ann Arbor, Mich., presented a paper on "Radiologic Aspects of Intrathoracic Disease," which was discussed by Drs. Herbert C. Maier, New York, and R. J. Whitacre, East Cleveland, Ohio.

Drs. Arthur M. Olsen and John W. Pender, Rochester, Minn., presented a paper on "Peroral Endoscopy: The Preparation of Patients." This paper was discussed by Drs. John D. Steele, Milwaukee, and Arthur Q. Penta, Schenectady, N. Y.

Drs. C. P. Bailey, H. P. Redondo-Ramirez, and H. B. Larzelere, Philadelphia, presented a paper on "The Surgical Treatment of Aortic Stenosis," which was discussed by Dr. Kenneth Keown, Philadelphia.

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

Tuesday, June 10—Morning

The meeting was called to order at 9:20 a. m., by the secretary, Dr. Hugh R. Butt, Rochester, Minn.

The following papers were read as a symposium on "Use of Chemotherapeutic and Antibiotic Agents:"

Dr. Hattie E. Alexander, New York: "In Infections of the Central Nervous System." This paper was discussed by Drs. Harry F. Dowling, Chicago, Francis H. Redewill, San Francisco, and Hattie E. Alexander, New York.

Dr. William A. Altemeier, Cincinnati: "In Infections of the Skeletal System." This paper was discussed by Drs. Guy A. Caldwell, New Orleans, and Champ Lyons, Birmingham, Ala.

Dr. Wallace E. Herrell, Rochester, Minn.: "In Infections of the Blood Stream and Heart." This paper was discussed by Drs. Thomas H. Hunter, St. Louis, Perrin H. Long, Brooklyn, and Wallace E. Herrell, Rochester, Minn.

Dr. Monroe J. Romansky, Washington, D. C.: "In Infections of the Respiratory System." This paper was discussed by Drs. A. M. Olsen, Rochester, Minn., Martin H. Seifert, Wilmette, Ill., Perrin H. Long, Brooklyn, and Monroe J. Romansky, Washington, D. C.

Drs. Reed M. Nesbit, William C. Baum, and Austin I. Dodson Jr., Ann Arbor, Mich.: "In Infections of the Genito-Urinary Tract." This paper was discussed by Drs. Grayson Carroll, St. Louis, and Russell D. Herrold, Chicago.

Dr. John D. Hughes, Memphis, Tenn.: "In Diseases of the Gastro-Intestinal Tract." This paper was discussed by Drs. Sidney Ross and Edwin J. Pulaski, Washington, D. C.

Wednesday, June 11—Morning

The following officers were elected: chairman, Dr. M. H. Seevers, Ann Arbor, Mich.; vice chairman, Dr. Irvine H. Page, Cleveland; secretary, Dr. Hugh R. Butt, Rochester, Minn.; delegate, Dr. Edgar V. Allen, Rochester, Minn.

The secretary took the chair while Dr. Carl V. Moore, St. Louis, gave the chairman's address, entitled "Problems Created by a National Blood Program: The Excessive Use of Blood Transfusions and the Effect of Frequent Donations on the Iron Requirements of Donors."

The Minot Lecture, "Some Aspects of the Leukemia Problem," was delivered by Dr. Cyrus C. Sturgis, Ann Arbor, Mich.

Drs. Charles C. Sprague and William J. Harrington, St. Louis, R. D. Lange, Kirkwood, Mo., and J. P. Shapleigh, St. Louis, presented a paper entitled "Platelet Transfusion and the Pathogenesis of Idiopathic Thrombocytopenic Purpura," which was discussed by Dr. Frank H. Gardner, Boston.

Dr. Lawrence E. Young, Rochester, N. Y., presented a paper on "The Differentiation Between Acquired and Congenital Forms of Hemolytic Anemia," which was discussed by Drs. Karl Singer, Chicago, J. Minott Stickney, Rochester, Minn., Israel Davidsohn, Chicago, and Lawrence E. Young, Rochester, N. Y.

Drs. Charles P. Bailey, George D. Geckeler, Raymond C. Truex, and William Likoff, Philadelphia, Nicholas A. Antonius, Newark, N. J., Armand W. Angulo and Hector P. Redondo-Ramirez, Philadelphia, presented a paper on "Arteriolization of the Coronary Sinus." This paper was discussed by Drs. Claude S. Beck and Harold Feil, Cleveland, and Joseph T. Roberts, Buffalo.

Drs. Simon Rodbard and Gerald R. Graham, Chicago, presented a paper on "Effect of Ingested Alumina Preparations on the Plasma Cholesterol Level in Man," which was discussed by Dr. Alex Kaplan, Chicago, and Simon Rodbard, Chicago.

Thursday, June 12—Morning

Joint Meeting with Section on Internal Medicine

The following papers were read as a symposium on "Recent Advances in Diabetes Mellitus:"

Dr. DeWitt Stetten Jr., New York: "Pathogenesis." This paper was discussed by Drs. Rachmiel Levine and Konrad Bloch, Chicago, and DeWitt Stetten Jr., New York.

Dr. Jonas S. Friedenwald, Baltimore: "Ocular Changes." This paper was discussed by Drs. Paul Kimmelstiel, Charlotte, N. C., Francis H. Adler, Philadelphia, and George W. Dana and Jonas S. Friedenwald, Baltimore.

Drs. Alexander Marble and Howard F. Root, Boston: "Degenerative Vascular Complications." This paper was discussed by Drs. Lester J. Palmer, Seattle, James W. Sherrill, La Jolla, Calif., and Alexander Marble, Boston.

Dr. Henry T. Ricketts, Chicago: "Modern Treatment." This paper was discussed by Drs. Carlos P. Lamar, Miami, Fla., and Henry T. Ricketts, Chicago.

Dr. Randall G. Sprague, Rochester, Minn.: "Diabetic Coma." This paper was discussed by Drs. Henry B. Mulholland, Charlottesville, Va., James A. Greene, Houston, Texas, and Randall G. Sprague, Rochester, Minn.

Dr. Edwin L. Rippy, Dallas, Texas: "The Improved Outlook of the Diabetic Patient." This paper was discussed by Drs. Russell M. Wilder, Bethesda, Md., and Leon S. Smelo, Birmingham, Ala.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

TUESDAY, JUNE 10—MORNING

The meeting was called to order at 9:10 a. m., by the chairman, Dr. Grant H. Laing, Chicago.

Drs. Jacob Lichstein and Leonard M. Asher, Los Angeles, presented a paper entitled, "Benign Gastric Mucosal Prolapse into Duodenum," which was discussed by Drs. Walter L. Palmer, Chicago, Moses Paulson, Baltimore, Jacob Lichstein, Los Angeles, and P. A. Tuckwiller, Charleston, W. Va.

Dr. Frank B. McGlone, Denver, read a paper on "Total Gastrectomy Problem: Cecal Transposition, Physiological Follow-Up." This paper was discussed by Drs. Claude Marshall Lee Jr., Cincinnati, Moses Paulson, Baltimore, Emerick Szilagyi, Detroit, Walter L. Palmer, Chicago, M. E. Steinberg, Portland, Ore., and Frank B. McGlone, Denver.

Dr. Alejandro F. Castro, Washington, D. C., read a paper on "Adenomatous Polyps of the Colon and Rectum."

Drs. Paul L. Shallenberger and Peter Fisher, Sayre, Pa., presented a paper entitled "Sigmoidoscopy: An Analysis of 3,500 Consecutive Cases." This paper was discussed by Drs. George E. Binkley, New York, Patrick H. Hanley, New Orleans, Foster L. McMillan, Chicago, Curtice Rosser, Dallas, Texas, Alejandro F. Castro, Washington, D. C., and Paul L. Shallenberger, Sayre, Pa.

A paper entitled, "Five Year Follow-Up on Patients with Duodenal Ulcer Treated by Vagotomy and Gastroenterostomy Compared with a Group Treated with Subtotal Resection," was presented by Drs. H. Marvin Pollard, Robert J. Bolt, Henry K. Ransom, and John E. Orebaugh, Ann Arbor, Mich., and was discussed by Drs. Frank H. Lahey, Boston, Lester R. Dragstedt, Chicago, M. E. Steinberg, Portland, Ore., and H. Marvin Pollard, Ann Arbor, Mich.

Dr. Lester M. Morrison, Los Angeles, read a paper on "Results of Azopyrine Treatment in Chronic Ulcerative Colitis," which was discussed by Drs. J. Arnold Bargen, Rochester, Minn., John M. McMahon, Bessemer, Ala., Sidney Portis, Chicago, and Lester M. Morrison, Los Angeles.

WEDNESDAY, JUNE 11—MORNING

The following officers were elected: chairman, Dr. Louis E. Moon, Omaha; vice chairman, Dr. Donovan C. Browne, New Orleans; secretary, Dr. Everett D. Kiefer, Boston; representatives to Scientific Exhibit, Dr. William H. Dearing, Rochester, Minn., and J. P. Nesselrod, Evanston, Ill.; member of American Board of Proctology to fill unexpired term of Dr. Curtice Rosser, resigned, Dr. H. R. Reichman, Salt Lake City; alternate delegate for a two year term, Dr. Raymond J. Jackman, Rochester, Minn.

Dr. Louis E. Moon, Omaha, reported a list of men certified as diplomates in anorectal surgery and a list of those certified as diplomates in proctology by the American Board of Proctology.

The chairman, Dr. Grant H. Laing, Chicago, presented a list of candidates passed and certified during 1951-1952 by the American Board of Gastro-Enterology.

Dr. Emil Granet, New York, read a paper on "Sigmoido-Rectal Intussusception," which was discussed by Drs. R. A. Peyster, and C. L. Martin, Chicago.

Dr. Grant H. Laing, Chicago, read the chairman's address entitled "Trends in Gastro-Enterology and Proctology."

Dr. R. Russell Best, Omaha, Neb., read a paper on "An Evaluation of Ileoproctostomy to Avoid Ileostomy in Various Colon Lesions." This paper was discussed by Dr. Mark M. Ravitch, Baltimore, and Dr. Guy V. Pontius, Chicago.

Drs. A. I. Friedman, Hackensack, N. J., and Richard H. Marshak and Harry Yarnis, New York, presented a paper on "Giant Benign Gastric Ulcers."

A paper on "Fate of Patients with Surgically Untreated Small Gastric Ulcers," was presented by Drs. James C. Cain, George L. Jordan, Mandred W. Comfort, and Howard K. Gray, Rochester, Minn.

These two papers were discussed by Drs. Russell S. Boles, Philadelphia, Joseph B. Kirsner, Chicago, A. I. Friedman, Hackensack, N. J., and James C. Cain, Rochester, Minn.

THURSDAY, JUNE 12—MORNING

Joint Meeting with Section on Pathology and Physiology

Dr. Eleanor M. Humphreys, Chicago, read a paper on "The Thymus and Thymic Tumors in Myasthenia Gravis," which was discussed by Drs. J. Alfred Rider and Edwin F. Hirsch, Chicago.

Dr. Byron E. Hall, Rochester, Minn., read a paper on "The Treatment of Nutritional Anemia." This paper was discussed by Drs. Grant H. Laing and Leon Jacobson, Chicago, and Byron E. Hall, Rochester, Minn.

Dr. Louis R. Limarzi, Chicago, read a paper on "The Meaning of Bone Marrow Studies: A Clinical Pathological Evaluation Based on Over 7,000 Marrow Examinations," which was discussed by Drs. S. A. Levinson, and Matthew H. Block, Chicago.

Drs. Burrill B. Crohn and Henry D. Janowitz, New York, presented a paper on "Acute Esophageal and Gastric Hemorrhage."

Dr. John R. Hill, Rochester, Minn., read a paper on "The Etiology of Pain in the Anorectal Region." This paper was discussed by Drs. Willard L. Cooper, Lexington, Ky., and Lyman R. Pearson, Indianapolis.

SECTION ON GENERAL PRACTICE

TUESDAY, JUNE 10—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Thomas E. Robinson, Salt Lake City.

Dr. Thomas E. Robinson, Salt Lake City, read the chairman's address, "The General Practitioner Takes a Look."

A Symposium and Panel Discussion on Atherosclerosis: Etiology, Pathogenesis, Treatment, and Prevention was conducted by Dr. Louis N. Katz, Chicago, Moderator, with the following participants: Drs. S. L. Wilens and Forrest E. Kendall, New York; Irvine H. Page, Cleveland; Jeremiah Stamler, Chicago; Fredrick J. Stare, Boston; Campbell Moses, Pittsburgh; Thomas M. Durant, Philadelphia; George E. Burch, New Orleans; Irving S. Wright, New York; Nelson W. Barker, Rochester, Minn.; R. Gordon Gould, Los Alamos, N. Mex.; and John W. Gofman, San Francisco.

WEDNESDAY, JUNE 11—AFTERNOON

Dr. Paul A. Davis, Akron, Ohio, presented the report of the delegate to the House of Delegates.

The following officers were elected: chairman, Dr. Richard A. Mills, Fort Lauderdale, Fla.; vice chairman, Dr. L. C. Burwell, Los Angeles; delegate, Dr. Paul A. Davis, Akron, Ohio; alternate delegate, Dr. Milton B. Casebolt, Kansas City, Mo.

Dr. William H. Walton, Belleville, Ill., presented a resolution urging that the Council on Medical Education and Hospitals encourage adequate general practice residencies in approved hospitals. The resolution was amended by Dr. Lester D. Bibler, Indianapolis, to stipulate that the delegate to the House of Delegates present the resolution at the interim session in the fall and was adopted.

The chairman announced the appointment of a program advisory committee to assist the secretary, composed of the following: Drs. Joseph C. Lindner, Cincinnati; Charles E. McArthur, Olympia, Wash.; Fred A. Humphrey, Fort Collins, Colo.

The chairman announced the appointment of an award committee for establishing an award for the outstanding paper given before the section by a general practitioner, composed of the following: Drs. Milton B. Casebolt, Kansas City, Mo., chairman; Eugene I. Baumgartner, Oakland, Md.; Winfred B. Harm, Detroit.

Dr. Wilfred C. Hulse, New York, presented a paper on "The Management of Sexual Conflicts in General Practice," which was discussed by Drs. Joseph C. Lindner, Cincinnati, Thomas E. Rardin, Columbus, Ohio, and William S. Kroger, Evanston, Ill.

A paper on "'Two-Step' Exercise Electrocardiogram: A Follow-Up Investigation in Patients with Chest Pain and Normal Resting Electrocardiogram," was presented by Drs. Arthur M. Master, Leon Pordy, and Kenneth Chesky, New York, and was discussed by Dr. Harry L. Jaffe, New York.

Dr. John G. Kuhns, Boston, read a paper on "Management of Osteoarthritis in the Aged," which was discussed by Drs. Edward F. Rosenberg and Granville A. Bennett, Chicago, and William S. Collens, Brooklyn.

Dr. E. H. Steffensen, Detroit, read a paper on "ACTH and Cortisone in the Treatment of Ocular Diseases," which was discussed by Drs. George J. Hamwi, Columbus, Ohio, and Dan M. Gordon, New York.

Drs. Sidney A. Portis and Charles H. Lawrence, Chicago, presented a paper on "Intractable Duodenal Ulcer." This paper was discussed by Drs. Waltman Walters, Rochester, Minn., and Moses Paulson, Baltimore.

Dr. Laurence W. Kinsell, Oakland, Calif., read a paper on "Newer Concepts in the Use of ACTH and Cortisone in Clinical Practice."

Dr. Philip Thorek, Chicago, presented a paper on "Practical Aspects of Inguinal Hernia."

THURSDAY, JUNE 12—MORNING

Joint Meeting with Section on Physical Medicine and Rehabilitation

Dr. Louis J. Karnosh, Cleveland, read a paper on "Hemiplegia: Pathology and Differential Diagnosis," which was discussed by Dr. Morton Marks, New York.

Drs. Earl C. Elkins and Joseph G. Rushton, Rochester, Minn., presented a paper on "Hemiplegia: Treatment in the Acute Phase." This paper was discussed by Dr. Sedgwick Mead, St. Louis.

Dr. Leonard J. Yamshon, Los Angeles, read a paper on "Hemiplegia: Rehabilitation Procedures," which was discussed by Drs. Harold Dinken, Denver, and Joseph G. Benton, New York.

A paper on "Early Management of the Paraplegic" was presented by Drs. Donald A. Covalt, Irving S. Cooper, Howard A. Rusk, and Thomas Hoen, New York. This paper was discussed by Dr. Louis B. Newman, Hines, Ill.

Dr. Duane A. Schram, Gonzales, Texas, read a paper on "Poliomyelitis: Present Concepts of Physical Medicine and Rehabilitation."

SECTION ON INTERNAL MEDICINE

TUESDAY, JUNE 10—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Carter Smith, Atlanta, Ga.

Dr. Willard O. Thompson, Chicago, presented a paper on "Present Status of ACTH and Cortisone," which was discussed by Dr. Edmund L. Dubois, Los Angeles.

Drs. L. Emmerson Ward, Philip S. Hench, Charles H. Slocumb, and Howard F. Polley, Rochester, Minn., presented a paper on "Cortisone in the Treatment of Rheumatoid Arthritis." This paper was discussed by Drs. Walter Bauer, Boston, Edward Boland, Los Angeles, Willard O. Thompson, Chicago, and L. Emmerson Ward, Rochester, Minn.

Dr. George H. Coleman, Chicago, delivered the Billings Lecture: "Focal Infection: Status After Forty Years."

Dr. Eugene F. Traut, Chicago, presented a paper on "Further Experiences with Procaine Amide in Treatment of Skeletal Pain," which was discussed by Dr. David J. Graubard, New York.

Drs. James A. Evans, Boston; Hyman J. Rubitsky, Roxbury, Mass., and Albert W. Perry, Victoria, B. C., presented a paper on "The Treatment of Diffuse Progressive Scleroderma." This paper was discussed by Drs. Robert R. Kierland, Rochester, Minn., Stephen Rothman, Chicago, and James A. Evans, Boston.

Dr. Bernard I. Lewis, Iowa City, presented a paper on "Psychosomatic Disorders and the Nonpsychiatrist," which was discussed by Drs. Walter L. Palmer, Chicago, and Joseph S. Skobba, Atlanta, Ga.

Dr. David T. Carr, Rochester, Minn., presented a paper on "The Current Status of Antimicrobial Therapy of Tuberculosis," which was discussed by Drs. Donald S. King, Brookline, Mass., and Du Mont F. Elmendorf, New York.

WEDNESDAY, JUNE 11—AFTERNOON

The following officers were elected: chairman, Dr. Truman G. Schnabel, Philadelphia; vice chairman, Dr. Howard P. Lewis, Portland, Ore.; secretary, Dr. Herrman L. Blumgart, Boston; three representatives on the American Board of Internal Medicine, Drs. William B. Castle, Boston; W. Barry Wood, St. Louis; Herrman L. Blumgart, Boston; delegate, Dr. Charles T. Stone Sr., Galveston, Texas; alternate delegate, Dr. William D. Stroud, Philadelphia.

Dr. John J. Sampson, San Francisco, presented a paper on "The Treatment of Cardiac Arrhythmias," which was discussed by Drs. Bruce Logue, Emory University, Ga., and John J. Sampson, San Francisco.

Dr. A. Carlton Ernstene, Cleveland, presented a paper on "The Complications and Sequelae of Acute Myocardial Infarction." This paper was discussed by Drs. Robert L. King, Seattle, G. K. Fenn, Chicago, and A. Carlton Ernstene, Cleveland.

Drs. Henry L. Jaffe, Maurice H. Rosenfeld, Frederick W. Pobirs, and Laurence J. Stuppy, Los Angeles, presented a paper on "End Result Study of 100 Patients with Advanced Heart Disease Treated with Radioiodine," which was discussed by Drs. Samuel Simkins, Philadelphia, Herrman L. Blumgart, Boston, and Henry L. Jaffe, Los Angeles.

Dr. Carter Smith, Atlanta, Ga., gave the chairman's address entitled "The Prognosis in Myocardial Infarction: A Clinical Follow-Up of 100 Patients over a Period of Ten to Twenty Years."

Dr. Irving S. Wright, New York, presented a paper on "An Evaluation of New Anticoagulants," which was discussed by Drs. Charles E. Thompson, Chicago, Samuel Baer, Philadelphia, and Irving S. Wright, New York.

Drs. Milton S. Sacks, Joseph B. Workman, and Elsa F. Jahn, Baltimore, presented a paper on "The Diagnosis and Treatment of Acquired Hemolytic Anemia." This paper was discussed by Drs. Raphael Isaacs, Chicago, C. Starr Wright, Columbus, Ohio, and Israel Davidsohn, Chicago.

Drs. Edwin E. Osgood and Arthur J. Seaman, Portland, Ore., presented a paper on "Treatment of Chronic Leukemias: Results of Treatment of 163 Patients by Titrated, Regularly Spaced Total Body Radioactive Phosphorus or Roentgen Irradiation." This paper was discussed by Drs. Howard L. Alt, Chicago, Robert W. Heinle, Cleveland, John H. Lawrence, Berkeley, Calif., and Edwin E. Osgood, Portland, Ore.

Thursday, June 12—Morning

A joint meeting was held with the Section on Experimental Medicine and Therapeutics. The proceedings are reported in the minutes of that section.

SECTION ON LARYNGOLOGY, OTOLOGY, AND RHINOLOGY

Tuesday, June 10—Afternoon

Dr. F. Lambert McGannon, Lakewood, Ohio, read a paper on "Some Practical Aids in the Management of Otolaryngologic Allergy," which was discussed by Drs. Walter E. Owen, Peoria, Ill., George E. Shambaugh Jr., Chicago, Fred W. Dixon, Cleveland, and Ralph J. Frackelton, Lakewood, Ohio.

Dr. Gordon F. Harkness, Davenport, Iowa, gave his report as delegate of the section.

Dr. Robert E. Ryan, St. Louis, read a paper on "The Differential Diagnosis and the Present and Future Treatment of Certain Types of Headache." This paper was discussed by Drs. Baynard T. Horton, Rochester, Minn., J. Milton Robb, Detroit, Gordon F. Harkness, Davenport, Iowa, and Sam H. Sanders, Memphis, Tenn.

Drs. Russell A. Sage and Maynard K. Hine, Indianapolis, presented a paper on "The Problem of the Sore Mouth," which was discussed by Drs. Paul M. Moore, Cleveland, O. E. Hallberg, Rochester, Minn., J. Allan Weiss, Chicago, and Joseph I. Kemler, Baltimore.

Drs. John J. Shea, Memphis, Tenn., and John J. Shea Jr., Camp Bainbridge, Md., presented a paper on "The Use and Abuse of Antibiotics in Otolaryngological Conditions." This paper was discussed by Drs. O. E. Van Alyea, Chicago, and K. M. Simonton, Rochester, Minn.

A film on neck dissection was presented by Dr. Dean M. Lierle, Iowa City.

Wednesday, June 11—Afternoon

The following officers were elected: chairman, Dr. Dean M. Lierle, Iowa City; vice chairman, Dr. F. W. Davidson, Danville, Pa.; secretary, Dr. Sam H. Sanders, Memphis, Tenn.; delegate, Dr. Gordon F. Harkness, Davenport, Iowa; alternate delegate, Dr. Charles D. Blassingame, Memphis, Tenn.

Dr. Carl H. McCaskey, Indianapolis, read the chairman's address on "How Much Otolaryngology Should Be Taught to the General Practitioner?"

Dr. Louis H. Clerf, Philadelphia, read a paper on "Unilateral Paralysis of the Vocal Cords," which was discussed by Drs. Oliver W. Suehs, Austin, Texas, Lewis F. Morrison, San Francisco, Robert B. Lewy, Chicago, and Oskar Hirsch, Boston.

Dr. K. M. Simonton, Rochester, Minn., read a paper on "The Selection of Patients for Surgical Procedures in Chronic Suppurative Otitis Media." This paper was discussed by Drs. Robert Boswell, Dayton, Ohio, Robert B. Lewy, Chicago, and J. Milton Robb, Detroit.

Dr. Neill Goltz, St. Paul, read a paper on "Autonomic Dysfunction in the Inner Ear," which was discussed by Drs. Raymond E. Jordon, Pittsburgh, F. W. Davidson, Danville, Pa., K. M. Simonton, Rochester, Minn., Joseph I. Kemler, Baltimore, and J. Milton Robb, Detroit.

Thursday, June 12—Morning

A joint meeting was held with the Section on Pediatrics. The proceedings are reported in the minutes of that section.

SECTION ON MISCELLANEOUS TOPICS

Session on Allergy

Wednesday, June 11—Afternoon

The meeting was called to order at 2 o'clock by the co-chairman, Dr. Harold A. Abramson, New York.

A paper on "Psychodynamic Pharmacology of the Treatment of Asthma" was presented by Dr. Harold A. Abramson, New York.

Dr. John M. Sheldon, Ann Arbor, Mich., presented a paper on "The Skin Test and Its Diagnostic Value in Clinical Allergy," which was discussed by Drs. Hal M. Davison, Atlanta, Ga., and Harold A. Abramson, New York.

Dr. Boen Swinney, San Antonio, Texas, then presented a paper on "Pollen and Mould Allergy in the Southwest." This paper was discussed by Drs. Ray M. Balyeat, Oklahoma City, and David R. Barglow, Trinidad, Colo.

Dr. Robert Chobot, New York, presented a paper on "Infectious Factors in Pediatric and Adult Allergy," which was discussed by Drs. Harry R. Weil, Milwaukee, Granville F. Knight, Santa Barbara, Calif., and Harry L. Huber, Chicago.

A panel discussion was held on "ACTH and Cortisone and Their Use in the Allergic Diseases" in which the participants were Drs. Horace S. Baldwin, New York, *Moderator*, Carl E. Arbesman, Buffalo, Augustus Gibson, Rahway, N. J., Albert H. Holland, Chicago, Giles A. Koelsche, Rochester, Minn., M. Murray Peshkin, New York, and Bram Rose, Montreal, Canada.

SECTION ON MILITARY MEDICINE

Tuesday, June 10—Morning

Joint Meeting with Section on Preventive and Industrial Medicine and Public Health and Section on Radiology

The meeting was called to order at 9:05 a. m. by the chairman of the Section on Military Medicine, Dr. Melvin A. Casberg, Washington, D. C.

Dr. H. S. Etter, Washington, D. C., read a paper on "Atomic Warfare Defense and the Navy," which was discussed by Dr. E. R. King, Bethesda, Md.

Dr. Elbert DeCoursey, Washington, D. C., presented a paper on "Pathologic Effects of Total Body Irradiation." This paper was discussed by Dr. Gerald M. McDonnel, Washington, D. C.

The chair was assumed by the chairman of the Section on Radiology, Dr. Ira H. Lockwood, Kansas City, Mo.

Dr. Frank Princi, Cincinnati, read a paper on "Diseases of the Chest Having an Occupational Origin: Industrial Medical Aspects," which was discussed by Dr. Oscar A. Sander, Milwaukee.

Dr. Eugene P. Pendergrass, Philadelphia, presented a paper on "Diseases of the Chest Having an Occupational Origin: Radiologic Aspects." This paper was discussed by Dr. Oscar A. Sander, Milwaukee.

The chair was assumed by the chairman of the Section on Preventive and Industrial Medicine and Public Health, Dr. Carey P. McCord, Ann Arbor, Mich.

Dr. O. Merton Derryberry, Chattanooga, Tenn., read a paper on "The Present Status of Mass Screening Techniques for Chest: Industrial Medical Aspects."

Dr. Arthur C. Christie, Washington, D. C., read a paper on "The Present Status of Mass Screening Techniques for Chest: Radiologic Aspects."

The papers of Drs. Derryberry and Christie were discussed by Drs. Leo G. Rigler, Minneapolis, S. F. Thomas, Palo Alto, Calif., and Robert J. Anderson, Washington, D. C.

WEDNESDAY, JUNE 11—MORNING

The following officers were elected: chairman, Dr. Richard A. Kern, Philadelphia; vice chairman, Dr. Dan C. Ogle, Washington, D. C.; secretary, Dr. Sheldon S. Brownton, Washington, D. C.; representative to Scientific Exhibit, Dr. R. V. Schultz, Washington, D. C.

Dr. Melvin A. Casberg, Washington, D. C., read the chairman's address on "Military Medicine." This paper was discussed by Drs. George E. Armstrong, H. Lamont Pugh, and Harry G. Armstrong, Washington, D. C.

Dr. I. S. Radvin, Philadelphia, read a paper on "Plasma Expanders," which was discussed by Dr. Lloyd R. Newhouser, Chelsea, Mass.

Dr. William W. Frye, New Orleans, read a paper on "The Treatment of Acute Amebic Dysentery in a Prisoner of War Camp." This paper was discussed by Drs. Bernard T. Garfinkel and Paul Lindsay, Washington, D. C.

A paper entitled "Wound Ballistics and Body Armor" by Dr. Robert H. Holmes, Washington, D. C., was presented and was discussed by Drs. Oscar P. Hampton Jr., St. Louis, and John S. Cowan, Washington, D. C.

Dr. Albert J. Glass, San Francisco, read a paper on "Current Military Psychiatric Problems," which was discussed by Drs. Charles A. Crandell, Greystone Park, N. J., and David Hamburg, Washington, D. C.

THURSDAY, JUNE 12—MORNING

Dr. Harris B. Shumacker Jr., Indianapolis, read a paper on "Shock and Vascular Injury," which was discussed by Drs. Howard E. Snyder, Winfield, Kan., and Sam F. Seeley, Washington, D. C.

Dr. Paul A. Campbell, Randolph Field, Texas, read a paper on "Flight Beyond the Atmosphere," which was discussed by Drs. Clayton S. White, Albuquerque, N. Mex., and Otis B. Schreuder, Dayton, Ohio.

There was a panel discussion on "Medical Military Personnel Matters," in which Dr. Stanley W. Olson, Chicago, was Moderator, and the participants were Drs. Melvin A. Casberg, A. H. Staderman, Paul C. Barton, J. F. McDonough, and Harold W. Glattly, Washington, D. C., Francis R. Manlove, Chicago, Erwin C. Drescher, Washington, D. C., Paul G. Armstrong, Chicago, and Roy Wolford, Washington, D. C.

The contributions presented by the panel were discussed by Drs. Harold S. Diehl, Minneapolis, and Arthur F. Mead, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

TUESDAY, JUNE 10—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Frank H. Luton, Nashville, Tenn.

Dr. Arthur A. Ward Jr., Seattle, read a paper entitled "Experimental Head Injury," which was discussed by Drs. Joseph P. Evans, Cincinnati, A. Earl Walker, Baltimore, and Arthur A. Ward, Seattle.

A paper entitled "Thrombosis of the Internal Carotid Artery in the Neck and in the Cranial Cavity: Symptoms and Signs, Diagnosis and Treatment," was presented by Drs. E. S. Gurdjian and John E. Webster, Detroit, and was discussed by Drs. Harold C. Voris, Chicago, and E. S. Gurdjian, Detroit.

A paper entitled "The Surgical Treatment of Cervical Intervertebral Disc Lesions," was presented by Drs. R. Glen Spurling and Ludwig H. Segerberg, Louisville, Ky., and was discussed by Drs. Loyal Davis, Chicago, Hans H. Reese, Madison, Wis., and R. Glen Spurling, Louisville, Ky.

A paper entitled "The Recognition of Surgically Treatable Neurologic Disorders of Childhood," was presented by Drs. Jonathan M. Williams and Harold Stevens, Washington, D. C. This paper was discussed by Drs. Alex J. Arieff and Harold C. Voris, Chicago, and Harold Stevens, Washington, D. C.

Dr. Harry Wilkins, Oklahoma City, read a paper entitled "Large Intracranial Calcified Lesions: A Clinical Evaluation of a Small Series of Cases," which was discussed by Drs. Keasely Welch, Detroit, Percival Bailey, Chicago, Gilbert Horrax, Boston, and Harry Wilkins, Oklahoma City.

A paper entitled "The Simulation of Degenerative Diseases of the Spinal Cord by Neoplasms of the Central Nervous System," was presented by Drs. H. R. Oberhill, Roger A. Smith, and Paul C. Bucy, Chicago, and was discussed by Drs. Benjamin Lichtenstein and Eric Oldberg, Chicago.

WEDNESDAY, JUNE 11—MORNING

The following officers were elected: chairman, Dr. Francis M. Forster, Washington, D. C.; vice chairman, Dr. Harold C. Voris, Chicago; secretary, Dr. Karl O. Von Hagen, Los Angeles; representative to American Board of Psychiatry and Neurology, Frederick P. Moersch, Rochester, Minn., and representative to Scientific Exhibit: Dr. G. Wilse Robinson, Kansas City, Mo.

On motions duly made, seconded and carried, the section accepted the reports of the Secretary of the American Board of Psychiatry and Neurology and of the Secretary of the American Board of Neurology.

Dr. Frank H. Luton, Nashville, Tenn., presented the chairman's address, entitled "The Psychiatrist, His Obligations and Opportunities."

A paper entitled "Nondementing Psychoses in Older Individuals" was presented by Drs. John J. Madden, Joseph A. Luhan, Leo A. Kaplan, and Harold M. Manfredi, Chicago, and was discussed by Drs. Omar A. Kenyon Jr., Indianapolis, and Benjamin Boshes and John J. Madden, Chicago.

A paper entitled "Tension Headache," was presented by Drs. Arnold P. Friedman, Naomi de Sola Pool, and Theodore J. C. von Storch, New York, and was discussed by Drs. Frederick P. Moersch, Rochester, Minn., Francis J. Gerty, Chicago, and Theodore J. C. von Storch and Arnold P. Friedman, New York.

Drs. John M. McMahon, Bessemer, Ala., Russell R. Monroe, and Claude C. Craighead, New Orleans, presented a paper entitled "Emotional Factors in Scleroderma." This paper was discussed by Drs. Franz G. Alexander, Chicago, Ruben Nomland, Iowa City, and John M. McMahon, Bessemer, Ala.

Dr. Harry A. Wilmer, Menlo Park, Calif., read a paper entitled "Group Therapy in a County Tuberculosis Sanatorium," which was discussed by Drs. David Boyd Jr., Rochester, Minn., Russell Meadows Jr., Warren, Pa., Theodore J. C. von Storch, New York, and Harry A. Wilmer, Menlo Park, Calif.

A paper entitled "Psychiatric Symptoms Associated with Lesions of the Temporal Lobe," was presented by Drs. Donald W. Mulder and David Daly, Rochester, Minn., and was discussed by Drs. Frederick A. Gibbs, Chicago, L. B. Alford, St. Louis, and Donald W. Mulder, Rochester, Minn.

THURSDAY, JUNE 12—MORNING

A paper entitled "Evaluation of the Results of Treatment of Cerebral Infarcts (Strokes)," was presented by Drs. Clark H. Milikan, John S. Lundy, and Lucian A. Smith, Rochester, Minn. This paper was discussed by Drs. Roland P. Mackay, Chicago, Michael Scott and James E. Eckenhoff, Philadelphia, and Clark H. Milikan, Rochester, Minn.

Dr. Cary G. Suter, Charlottesville, Va., read a paper entitled "Anomic Aphasia: Its Differential Diagnosis and Cerebral Localization with a Study of Twenty Cases," which was discussed by Drs. Richard B. Richter, Chicago, and Cary G. Suter, Charlottesville, Va.

Dr. Henry W. Kumm, New York, read a paper entitled "Recent *Acquisition to Our Knowledge About Poliomyelitis,*" which was discussed by Drs. Mabel G. Masten, Madison, Wis.; Hilary Koprowski, Pearl River, N. Y., Richard B. Richter, Chicago, Joseph A. Luhan, Chicago, Hans H. Reese, Madison, Wis., and Henry W. Kumm, New York.

Dr. Hans H. Reese, Madison, Wis., delegate, gave a report on the activities of the House of Delegates, which was accepted.

A paper entitled "Infectious Neuronitis: Present Concepts Concerning Etiology and Treatment," was presented by Drs. Karl O. Von Hagen and Robert N. Baker, Los Angeles, and was discussed by Drs. Ephraim Roseman, Louisville, Ky., Joseph A. Luhan, Chicago, Irving C. Sherman, Chicago, Karl O. Von Hagen, Los Angeles.

Drs. Guy H. Williams Jr., William A. Nosik, and John A. Hunter, Cleveland, presented a paper entitled "Convulsions As a Manifestation of Multiple Sclerosis," which was discussed by Drs. Benjamin Boshes, Chicago, and Guy H. Williams, Cleveland.

A paper entitled "Advances in the Control of Tremor," was presented by Drs. L. J. Doshay, K. C. Constable, and Stephen Fromer, New York, and was discussed by Drs. Henry von Witzleben, Chicago, and L. J. Doshay, New York.

SECTION ON OBSTETRICS AND GYNECOLOGY

TUESDAY, JUNE 10—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Louis H. Douglass, Baltimore.

Drs. Martin L. Stone and Alfred Tanz, New York, presented a paper on "Intravenous Administration of Posterior Pituitary Extract Before and During Labor," which was discussed by Dr. Nicholson J. Eastman, Baltimore.

Drs. James E. Eckenhoff, George L. Hoffman Jr., and Lonnie W. Funderburg, Philadelphia, presented a paper on "N-Allyl Normorphine: An Antagonist to Neonatal Narcosis Produced by Parturient Sedation," which was discussed by Dr. Edwin J. De Costa, Chicago.

Drs. Ernest W. Page and Emery P. Page, San Francisco, presented a paper on "Etiology and Treatment of Leg Cramps in Pregnancy," which was discussed by Dr. R. J. Miller, Harrisburg, Pa.

Drs. Charles S. Stevenson, Charles L. Schneider, and Robert G. Braden, Detroit, presented a paper on "Abruptio Placentae: Certain Concepts in Its Management." This paper was discussed by Drs. Michael J. Roach Jr., Memphis, Tenn., and J. P. Greenhill, Chicago.

Drs. John H. Moore and Frank A. Hill, Grand Forks, N. D., presented a paper on "The Postpartum Cervix," which was discussed by Dr. Charles J. Smith, Chicago.

Drs. Leon Krohn, Maurice S. Priver, and Milton H. Gotlib, presented a paper on "A New Etiologic Factor in Ectopic Pregnancy," which was discussed by Dr. Robert M. Campbell, Seattle.

WEDNESDAY, JUNE 11—AFTERNOON

The following officers were elected: chairman, Dr. Albert W. Holman, Portland, Ore.; vice chairman, Dr. Gordon W. Douglas, New York; secretary, Dr. Bernard J. Hanley, Los Angeles; delegate, Dr. Harvey B. Matthews, Brooklyn; alternate delegate, Dr. Daniel G. Morton, Los Angeles; representatives to American College of Surgeons, Drs. Alice F. Maxwell, San Francisco, Willard R. Cooke, Galveston, Texas, and Samuel A. Cosgrove, Jersey City, N. J.; representative to Subcommittee for State and Local Mortality and Morbidity, of the American Committee on Maternal Welfare, Dr. George H. Davis, Baltimore; representatives to American Committee on Maternal Welfare, Drs. William Benbow Thompson, Los Angeles, Robert D. Mussey, Rochester, Minn., and Carl Henry Davis, Miami, Fla.; and representative to Scientific Exhibit, Dr. Frederick H. Falls, Chicago.

Dr. Louis H. Douglass, Baltimore, read the chairman's address on "Soft Tissue Repairs."

Dr. William B. Norment, Greensboro, N. C., read a paper on "Uses of the Hysteroscope in Gynecological Diagnosis."

Dr. LeMon Clark, Oklahoma City, read a paper on "Exebiatric Gynecology," which was discussed by Dr. Nadina R. Kavinoky, Los Angeles.

Drs. Vincent P. Mazzola, N. J. Mazzola, Frances V. Mitchell, Henry L. Martone, and David Fettis, presented a paper on "Vaginal Hysterectomy for Uterine Prolapse: Report of 1,000 Cases," which was discussed by Drs. Virgil S. Counseller, Rochester, Minn., and Karl H. Martzloff, Portland, Ore.

Dr. James C. Doyle, Beverly Hills, Calif., read a paper on "Is This Hysterectomy Necessary?" This paper was discussed by Drs. Ralph E. Campbell, Madison, Wis., and William F. Mengert, Dallas, Texas.

Dr. George H. Davis, Baltimore, read a paper on "Maternal Mortality in Baltimore from 1936 Through 1950," which was discussed by Drs. John Whitridge Jr., Baltimore, and Charles Newberger, Chicago.

THURSDAY, JUNE 12—AFTERNOON

Drs. Duncan E. Reid, Mandel E. Cohen, and Eli Robins, Boston, presented a paper on "Excessive Surgery in Hysteria," which was discussed by Dr. Roland P. Mackay, Chicago.

Drs. Jacob Hoffman, David M. Farell, and George A. Hahn, Philadelphia, presented a paper on "A Review of 4,200 Biopsies of the Cervix with Relation to Carcinoma in Situ." This paper was discussed by Drs. Karl H. Martzloff, Portland, Ore., Carl Henry Davis, Miami, Fla., and H. E. Nieburgs, Augusta, Ga.

Dr. Keith P. Russell, Los Angeles, read a paper on "Changing Indications for Therapeutic Abortion: 20 Years' Experience at the Los Angeles County Hospital," which was discussed by Drs. H. Close Hesseltine, Chicago, R. W. Holmes, Charlottesville, Va., and J. P. Greenhill, Chicago.

Dr. Roy J. Heffernan and William A. Lynch, Brookline, Mass., presented a paper on "What Is the Status of Therapeutic Abortion in Modern Obstetrics?" This paper was discussed by Drs. J. H. Randall, Iowa City, and Herbert Ratner, Chicago.

Dr. Sherman S. Garrett, Champaign, Ill., read a paper on "Vitamins in the Etiology and Treatment of Eclamptic Toxemia," which was discussed by Dr. William J. Dieckmann, Chicago.

Drs. V. M. Bowers and D. N. Danforth, Evanston, Ill., presented a paper on "Significance of Poliomyelitis During Pregnancy: Analysis of the Literature, with 24 New Cases." This paper was discussed by Dr. V. M. Bowers, Evanston, Ill.

COMBINED MEETING OF SECTION ON OPHTHALMOLOGY WITH ASSOCIATION FOR RESEARCH IN OPHTHALMOLOGY

Association for Research in Ophthalmology

Tuesday, June 10—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. David G. Cogan, Boston.

Dr. Walter H. Fink, Minneapolis, read a paper entitled, "The Development of the Extrinsic Muscles of the Eye." This paper was discussed by Drs. Leon S. Stone, New Haven, Conn., L. V. Johnson, Cleveland, H. M. Burian, Iowa City, and David G. Cogan, Boston.

Dr. R. H. Monahan, Minneapolis, read a paper entitled, "Channels in the Crystalline Lens Capsule," which was discussed by Drs. Zacharias Dische, Conrad Berens, Ludwig von Sallmann, and M. A. Last, New York, Everett Kinsey, Detroit, and David G. Cogan, Boston.

Dr. Leon S. Stone, New Haven, Conn., read a paper entitled, "An Experimental Analysis of Lens Regeneration," which was discussed by Drs. H. M. Burian, Iowa City, John Bellows, Chicago, Lawrence R. Dame, Greenfield, Mass., Ludwig von Sallmann, New York, Clarence W. Rainey, Evanston, Ill., and Everett Kinsey, Detroit.

A paper entitled, "Reversal of the Lenticular Cation Shift Induced by Cold," was presented by Drs. John E. Harris, Leta B. Gehrsitz, and Loretta T. Nordquist, Portland, Ore., and was discussed by Drs. Jonas S. Friedenwald, Baltimore, Ludwig von Sallmann, New York, David Shoch, Chicago, and David G. Cogan, Boston.

Dr. E. A. Zeller, Chicago, read a paper entitled, "On the Catalase of Crystalline Lens," which was discussed by Drs. Everett Kinsey, Detroit, and David G. Cogan, Boston.

A paper entitled, "Nucleotides and Glutathione of the Capsule and Epithelium of the Lens Under Physiological and Abnormal Conditions," was presented by Drs. Zacharias Dische, Gabrielle Ehrlich, Carmen M. Munoz, and Ludwig von Sallmann, New York, and was discussed by Drs. Everett Kinsey, Detroit, John E. Harris, Portland, Ore., E. A. Zeller, Chicago, and David G. Cogan, Boston.

Dr. Roy O. Scholz, Baltimore, read a paper entitled, "Studies of the Physiology of the Eye Using Tracer Substances: *Part 4.* A Comparison of the Steady-State Ratio of Sodium Between the Plasma and Aqueous Humor in Normal Guinea Pigs."

Wednesday, June 11—Morning

Dr. Samuel V. Abraham, Los Angeles, read a paper entitled, "The Use of Several New Products as Substitutes for Homatropine." This paper was discussed by Drs. Joseph Lebensohn, Chicago, Irving Leopold, Philadelphia, David G. Cogan, Boston, and Ludwig von Sallmann, New York.

Dr. John C. Locke, Montreal, Canada, read a paper entitled, "Studies in Antibiotic Antagonism and Synergism," which was discussed by Drs. Irving Leopold, Philadelphia, Samuel V. Abraham, Los Angeles, and James H. Allen, New Orleans.

A paper entitled, "Studies on the Effect of Nor-Adrenalin and Adrenalin on the Eye," was presented by Drs. Ludwig von Sallmann, M. P. Meyers, and B. Pillat, New York, and was discussed by Drs. David G. Cogan, Boston, Frank Newell, Chicago, M. A. Last, New York, and Charles K. Ascher, Cincinnati.

Dr. W. K. Noell, Randolph Field, Texas, read a paper entitled, "Experimentally Induced Toxic Effects on Structure and Function of Visual Cells and Pigment Epithelium," which was discussed by Drs. Ludwig von Sallmann, Zacharias Dische, New York, and Robb McDonald, Philadelphia.

A paper entitled, "Effect of Cortisone in Experimental Vaccinia Virus Keratoconjunctivitis of the Rabbit," was presented by Drs. S. J. Kimura, San Francisco, Hilda Geller, and Phillips Thygeson, San Jose, Calif., and was discussed by Drs. David G. Cogan, Boston, A. E. Braley, Iowa City, R. E. Thorp, Pittsburgh, and M. A. Last, New York.

A paper entitled, "Cortisone in Experimental Homologous Keratoplasty in the Rabbit," was presented by Drs. Gaylord Ojers, Jules Yasuna, and Harold G. Scheie, Philadelphia, and was discussed by Drs. Ludwig von Sallmann, New York, and Frank Newell, Chicago.

The following officers were elected: chairman, Brittain F. Payne, New York; secretary, James H. Allen, New Orleans; board of trustees, William F. Hughes, Chicago, William B. Clark, New Orleans, Robb McDonald, Philadelphia, T. E. Sanders, St. Louis, and Michael Hogan, San Francisco.

Thursday, June 12—Morning

A paper entitled, "The Nutrition of Corneal Regions in Experimental Animals: 2. The Corneal Transparency Problem and the Tonicity of Tears," was presented by Drs. Albert M. Potts and Mildred Orchen, Cleveland, and was discussed by Drs. David G. Cogan, Boston, and Ludwig von Sallmann, New York.

Dr. Elek Ludvigh, Detroit, read a paper entitled, "Direction Sense of the Eye," which was discussed by Drs. Hugo L. Bair, Rochester, Minn., H. L. Underwood, Vancouver, Wash., Kenneth Ogle, Rochester, Minn., and C. K. W. Ascher, Cincinnati.

Dr. John W. Patterson, Cleveland, read a paper entitled, "Cataracts Caused by Carbohydrates." This paper was discussed by Drs. David Shoch, Chicago, James H. Allen, New Orleans, David G. Cogan, Boston, and Zacharias Dische, New York.

Dr. Raymond C. Collins, East Orange, N. J., read a paper entitled, "Further Experimental Studies on Sympathetic Ophthalmia," which was discussed by Drs. David G. Cogan, Boston, T. E. Sanders, St. Louis, Loren P. Guy, New York, and Richey L. Waugh Jr., New Orleans.

A paper entitled, "Metabolism of Fluid Tissue Cultures Used for Virus Studies," was presented by Drs. A. E. Braley and R. C. Alexander, Iowa City, and was discussed by Drs. David G. Cogan, Boston, Everett Kinsey, Detroit, and James H. Allen, New Orleans.

A paper entitled, "Experimental Study of Plastic Material as a Substitute for Opaque Corneas," was read by Dr. William A. Stone, Boston, and was discussed by Drs. David G. Cogan, Boston, and Conrad Berens, New York.

Section on Ophthalmology

Tuesday, June 10—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Edwin B. Dunphy, Boston, who read the chairman's address.

Dr. Arthur J. Bedell, Albany, N. Y., read a paper entitled "The Clinical Significance of Some Congenital Changes in the Optic Disc," which was discussed by Dr. Frank B. Walsh, Baltimore.

A paper entitled, "Clinico-Pathology of Ocular Foreign Bodies," was presented by Drs. Bernard A. Roberts, Abraham Schlossman, and Edgar B. Burchell, New York, and was discussed by Drs. Helenor C. Wilder, Washington, D. C., and H. E. Thorpe, Pittsburgh.

Dr. Frederick H. Theodore, New York, read a paper entitled, "Drug Sensitivities and Irritations of the Conjunctiva," which was discussed by Drs. Albert N. Lemoine, Kansas City, Mo., and James H. Allen, New Orleans.

Dr. James M. O'Brien, Bridgeport, Conn., read a paper entitled, "Retinitis Pigmentosa." This paper was discussed by Drs. Francis H. Adler, Philadelphia, and Hermann M. Burian, Iowa City.

Dr. Roderic O'Connor, Oakland, Calif., read a paper entitled, "Surgery of the Vertical Phorias," which was discussed by Dr. Francis H. Adler, Philadelphia.

Dr. Loren P. Guy, New York, read a paper entitled, "Retrolental Fibroplasia: A Clinical Report," which was discussed by Drs. Thaddeus Szewczyk, East St. Louis, Ill., and Frederick C. Blodi, New York.

A paper entitled, "The Visual Fields, the Discs and Their Fate in Pituitary Tumors," was presented by Drs. Oscar Hirsch, Boston, and Hannibal Hamlin, Providence, R. I., and was discussed by Drs. Gilbert Horrax, Boston, and Arthur J. Bedell, Albany, N. Y.

Wednesday, June 11—Afternoon

The following officers were elected: chairman, Dr. Francis H. Adler, Philadelphia; vice chairman, Dr. Frederick A. Davis, Madison, Wis.; secretary, Dr. Trygve Gundersen, Boston; and assistant secretary, Dr. Harold G. Scheie, Philadelphia. Dr. Robert J. Masters, Indianapolis, was appointed as chairman of the executive committee.

The following reports were read and accepted: American Committee on Optics and Visual Physiology; Committee on American Board of Ophthalmology; Committee on National Museum of Ophthalmic Pathology; Committee on Scientific Exhibits; Committee on Museum of Ophthalmic History; Committee on Standard Nomenclature; Committee on the American Orthoptic Council; Joint Committee on Industrial Ophthalmology; Board of Governors; 37th Clinical Conference, American College of Surgeons; Governors' Meeting, American College of Surgeons; Joint Committee on Study of Retrolental Fibroplasia; Committee on the Knapp Testimonial Fund; Committee on the Lucian Howe Fund; Committee of One re Membership in International Federation of Ophthalmologic Societies; Delegate to American Medical Association House of Delegates; Committee on Award of the Knapp Medal; and the Executive Committee.

Dr. Arthur J. Bedell, Albany, N. Y., received the Prize Award in Ophthalmology.

Dr. L. S. Stone, New Haven, Conn., read a paper entitled, "Normal and Reversed Vision in Transplanted Eyes," which was discussed by Dr. Hermann M. Burian, Iowa City.

Dr. Giambattista Bietti, Pavia, Italy, invited foreign guest, presented an address.

Dr. Hermann M. Burian, Iowa City, read a paper entitled, "Electroretinography and Its Clinical Application," which was discussed by Dr. Francis H. Adler, Philadelphia.

Dr. Charles K. W. Ascher, Cincinnati, read a paper entitled, "Aqueous Veins, Their Status 11 Years After Their Detection." This paper was discussed by Dr. Harold G. Scheie, Philadelphia.

Dr. Paul W. Miles, St. Louis, read a paper entitled, "Depth of Focus and Amplitude of Accommodation Through Trifocal Glasses," which was discussed by Dr. Edwin F. Tait, Norristown, Pa.

Thursday, June 12—Afternoon

Dr. Holger Ehlers, Copenhagen, Denmark, invited foreign guest, read a paper entitled, "Clinical Testing of the Visual Acuity."

A paper entitled, "Clinical and Experimental Studies in Hydrocortisone (Compound F) in Ophthalmology," was presented by Drs. P. Robb McDonald, Irving H. Leopold, and Robert D. Mulberger, Philadelphia, and A. W. Vogel, Ardmore, Pa., and was discussed by Dr. Frank W. Newell, Chicago.

A paper entitled, "The Present Status of Corticotropin, Cortisone and Compound F in Ophthalmology," was presented by Drs. Dan M. Gordon, John M. McLean, and Herbert Koteen, New York. This paper was discussed by Drs. James A. Olson, Detroit, and Lester E. Johnson, Wichita, Kan.

A paper entitled, "Idiopathic Retinal Detachments: An Analysis of Results," was presented by Drs. Taylor R. Smith, Boston, and L. Harrell Pierce, Baltimore, and was discussed by Drs. Peter C. Kronfeld, Chicago, and H. E. Thorpe, Pittsburgh.

A paper entitled, "Curare and Local Anesthesia," was presented by Drs. Daniel B. Kirby and Paluel J. Flagg, New York, and was discussed by Drs. Henry K. Beecher, Boston, Conrad Berens, New York, and James H. Allen, New Orleans.

Dr. William Stone Jr., Brookline, Mass., read a paper entitled, "The Use of Lid Sutures in Cataract Surgery and Presentation of a New Technique." This paper was discussed by Dr. Conrad Berens, New York.

Dr. Alfred Uihlein, Rochester, Minn., read a paper entitled, "Anterior Clinoid Meningiomas: A Cause of Unilateral Loss of Vision," which was discussed by Dr. Richard B. Pippitt, Boston.

SECTION ON ORTHOPEDIC SURGERY

Tuesday, June 10—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Frederic C. Bost, San Francisco.

Dr. R. W. Newman, Iowa City, read a paper on, "Recurring Dislocation of the Shoulder: Operative Treatment, Pertinent Anatomic, Functional and Pathologic Features," which was discussed by Drs. George L. Dixon, Tucson, Ariz., and Carlo S. Scuderi, Chicago.

A paper prepared by Dr. Pio Blanco, Buffalo, on "Synovectomy of the Knee Joint: Indications and End Results: A Preliminary Report," was presented, and it was discussed by Drs. Clinton L. Compere and William A. Larmon, Chicago, and J. Albert Key, St. Louis.

Drs. William H. Bickel, Rochester, Minn., Robert F. Kimbrough, Fort Wayne, Ind., and David C. Dahlin, Rochester, Minn., presented a paper on "Tuberculous Tenosynovitis." This paper was discussed by Drs. Frederick R. Thompson, New York, Harvey S. Allen, Chicago, and J. Albert Key, St. Louis.

Dr. David M. Bosworth, New York, Alphonso Della Pietra, Hartford, Conn., and George Rahilly, Fort Lauderdale, Fla., presented a paper on, "Paraplegia Resulting from Tuberculosis of the Spine," which was discussed by Drs. Ignacio V. Ponseti, Iowa City, and Robert O. Ritter, Chicago.

Dr. James W. Miller, Seattle, read a paper on, "The Conservative and Prophylactic Surgical Management of Foot Lesions in the Diabetic." This paper was discussed by Drs. Donald C. Conzett, Dubuque, Iowa, and Jerome G. Finder, Chicago.

Drs. Frank D. Dickson, Rex L. Diveley, and Richard H. Kiene, Kansas City, Mo., presented a paper on, "The Treatment of Subacute and Chronic Osteomyelitis with the Use of Antibiotics and Primary Closure," which was discussed by Drs. Theodore H. Vinke, Cincinnati, Earl S. Leimbacher, Joliet, Ill., and Rex. L. Diveley, Kansas City, Mo.

Wednesday, June 11—Afternoon

Dr. H. Relton McCarroll, St. Louis, vice chairman, reported for the delegate to the House of Delegates.

The following officers were elected: chairman, Dr. H. Relton McCarroll, St. Louis; vice chairman, Dr. Charles N. Pease, Chicago; secretary, Dr. Frederick R. Thompson, New York; representative to Scientific Exhibit, Dr. J. Vernon Luck, Los Angeles; delegate, Dr. Edward L. Compere, Chicago; alternate delegate, Dr. I. S. McReynolds, Houston, Texas; representatives to American Board of Orthopedic Surgery, Drs. Hugh M. A. Smith Jr., Memphis, Tenn., and G. W. N. Eggers, Galveston, Texas.

Dr. L. Stanley Sell, Idaho Falls, Idaho, read a paper on, "Misdiagnosis and Mismanagement of Early Intervertebral Disc Lesions."

Dr. Frank L. Shipp, Boston, read a paper on, "Myelography: Use or Abuse."

The papers of Drs. Sell and Shipp were discussed by Drs. Loyal Davis, Chicago, J. Albert Key, St. Louis, and Reed S. Clegg, Salt Lake City.

Dr. Frederic C. Bost, San Francisco, read the chairman's address, "The Physician and the Services for the Care of the Crippled Child."

A paper prepared by Drs. C. Fred Ferciot and Frederick S. Webster, Lincoln, Neb., on, "Calcaneovalgus Foot in the Newborn and Its Relation to Developmental Flat Foot," was presented and was discussed by Drs. Walter P. Blount, Milwaukee, and Albert L. Bershon, Toledo, Ohio.

Dr. James B. Weaver, Kansas City, Kan., read a paper on, "Hemangiomata in Orthopedic Surgery," which was discussed by Dr. Robert D. Moore, Kankakee, Ill.

Thursday, June 12—Afternoon

Dr. Arthur A. Michele, Brooklyn, read a paper on, "Trigger-Point Scapulocostal Syndrome." This paper was discussed by Drs. Ruth Jackson, Dallas, Texas, and Jesse B. Griffith, Pittsburgh.

Drs. Robert B. Portis, and Howard A. Mendelsohn, Beverly Hills, Calif., presented a paper on, "The Conservative Management of Fractures of the Ankle Involving the Medial Malleolus," which was discussed by Drs. Fred L. Stuttle, Peoria, Ill., and Milton S. Thompson, San Antonio, Texas.

Drs. Robert H. Ramsey and H. Relton McCarroll presented a paper on "The Problem of the Muscular Dystrophies," which was discussed by Drs. Howard A. Swart, Charleston, W. Va., and George L. Dixon, Tucson, Ariz.

Dr. Marcus J. Stewart, Memphis, Tenn., read a paper on, "Fracture of the Carpal Scaphoid." This paper was discussed by Drs. F. W. Carruthers, Little Rock, Ark., and Newton C. Mead, Evanston, Ill.

Dr. R. C. Robertson, Chattanooga, Tenn., read a paper on, "Intramedullary Fixation of Fractures of the Forearm: Evaluation of 20 Successive Unselected Cases."

Drs. J. E. M. Thomson, Duane A. Willander, and Edward S. Maxim, Lincoln, Neb., presented a paper on, "The Treatment of Certain Fractures of the Forearm with Kuntscher Nail."

These two papers were discussed by Drs. Dana M. Street, Memphis, Tenn., Bruce Brewer, Milwaukee, and J. E. M. Thomson, Lincoln, Neb.

SECTION ON PATHOLOGY AND PHYSIOLOGY

Tuesday, June 10—Afternoon

The meeting was called to order at 2:05 p. m., by the chairman, Dr. Paul R. Cannon, Chicago.

Dr. Harry J. Corper, Denver, presented a paper on, "An Analysis of the Value of Chemotherapeutic Agents in the Treatment of Tuberculosis," which was discussed by Drs. Willard Van Hazel, Chicago, and Earle M. Chapman, Boston.

Dr. J. Earl Thomas, Philadelphia, read a paper on, "The Normal and Pathological Physiology of the External Pancreatic Secretion," which was discussed by Drs. M. I. Grossman, Chicago, and Earle M. Chapman, Boston.

A paper entitled, "The Present Status of Blood Substitutes," was presented by Drs. Frank W. Hartman and Vivian G. Behrmann, Detroit, and was discussed by Dr. Clyde G. Culbertson, Indianapolis, Col. William H. Anspacher, Fort Sam Houston, Texas, and Drs. John Scudder, New York, Curtis P. Artz, Fort Sam Houston, Texas, and F. D. Lawrason, Washington, D. C.

Dr. Roger D. Baker, Birmingham, Ala., read a paper on, "Fungus Infections: 1. Resectable Mycotic Lesions; 2. Acutely Fatal Mycoses," which was discussed by Drs. Duane Carr, Memphis, Tenn., and Edwin F. Hirsch, Chicago.

A paper entitled, "Cortisone in the Treatment of Experimentally Produced Myocardial Infarcts in Dogs," was presented by Drs. Aran S. Johnson, Schayel R. Scheinberg, Robert A. Gerisch and Harry C. Saltzstein, Detroit, and was discussed by Dr. Louis N. Katz, Chicago.

Wednesday, June 11—Afternoon

Dr. Paul R. Cannon, Chicago, presented the chairman's address on, "Problems of Parenteral Alimentation."

The following officers were elected: chairman, Dr. L. G. Montgomery, Muncie, Ind.; vice chairman, Dr. J. Earl Thomas, Philadelphia; secretary, Dr. Edwin F. Hirsch, Chicago; delegate, Dr. M. G. Westmoreland, Chicago; alternate delegate, Dr. H. J. Corper, Denver; representative to Scientific Exhibit, Dr. Frank B. Queen, Portland, Ore.; representatives to American Board of Pathology, Drs. Israel Davidsohn, Chicago, and James Kernohan, Rochester, Minn.

Dr. Clayton G. Loosli, Chicago, read a paper on, "Some Epidemiological Aspects of Pulmonary Histoplasmosis," which was discussed by Drs. M. L. Furcolow, Kansas City, Kan., and Frank B. Queen, Portland, Ore.

A paper entitled, "Tests of Pulmonary Function Using Recording Oximeters," was presented by Drs. John F. Perkins Jr., William E. Adams, and Adolfo Flores, Chicago, and was discussed by Dr. William M. Lees, Chicago.

Dr. Paul E. Steiner, Chicago, read a paper on, "Human Significance of Experimental Carcinogenesis," which was discussed by Drs. Stanley P. Reimann, Philadelphia, William B. Wartman, Chicago, and Harry Bergman, New York.

Dr. Cecil A. Krakower, Chicago, presented a paper on, "Experimental Glomerulonephritis," which was discussed by Drs. Granville A. Bennett and J. P. Simonds, Chicago.

Thursday, June 12—Morning

A joint meeting was held with the Section on Gastro-Enterology and Proctology. The proceedings are reported in the minutes of that section.

SECTION ON PEDIATRICS

Tuesday, June 10—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Walter B. Stewart, Atlantic City, N. J.

The following papers were read as a symposium on the "Present Status of Corticotropin, Cortisone, and Allied Substances in Pediatric Practice":

Dr. Edward W. Boland, Los Angeles: "Practical Considerations in the Clinical Application of Cortisone, Hydrocortisone (Compound F), and Corticotropin (ACTH)."

Dr. Joseph J. Bunim, New York: "Corticotropin and Cortisone in the Treatment of Rheumatic Fever and Rheumatoid Arthritis in Children."

Dr. William B. Sherman, New York: "Corticotropin (ACTH) and Cortisone in the Treatment of Asthma and Eczema."

Dr. Conrad M. Riley, New York: "Corticotropin and Cortisone in the Management of the Nephrotic Syndrome in Children."

Drs. J. M. Stickney and S. D. Mills, Rochester, Minn.: "Corticotropin and Cortisone in the Management of Diseases of the Blood in Children."

Drs. Lawrance W. Kinsell and John W. Partridge, Oakland, Calif.: "The Use of Corticotropin and Cortisone in Shock, Burns, and Overwhelming Infection."

These papers were discussed by Drs. Edward W. Boland, Los Angeles, Eric Reiss, Philadelphia, Conrad M. Riley, and Joseph J. Bunim, New York, and Laurance W. Kinsell, Oakland, Calif.

Wednesday, June 11—Morning

The following officers were elected: chairman, Dr. Eugene T. McEnery, Chicago; vice-chairman, Dr. Oliver L. Stringfield, Stamford, Conn.; secretary, Dr. Wyman C. C. Cole, Detroit; delegate, Dr. Woodruff L. Crawford, Rockford, Ill.; alternate delegate, Dr. Oliver L. Stringfield, Stamford, Conn.; custodian of the Jacoby Fund, Dr. Hugh L. Dwyer, Kansas City, Mo.; representative to Scientific Exhibit, Dr. F. Thomas Mitchell, Memphis, Tenn.; and representative to International Congress of Pediatrics, Dr. Margaret Mary Nicholson, Washington, D. C.

Dr. Walter B. Stewart, Atlantic City, read the chairman's address on, "The Pediatrician Takes Stock."

Dr. T. S. Szewczyk, East St. Louis, Ill., read a paper on, "Prophylaxis of Retrolental Fibroplasia by Oxygen Administration," which was discussed by Drs. T. E. Sanders, St. Louis, Heyworth N. Sanford, Chicago, and A. D. Ruedemann and Everett Kinsey, Detroit.

Dr. H. M. Slater, Montreal, read a paper on, "Resuscitation in Infants and Children," which was discussed by Dr. Mary Lou White, New Haven, Conn.

Drs. Harry R. Litchfield, Richard Turin, and Jacob Halperin, Brooklyn, presented a paper on, "Fetal Mortalities in Cesarean Sections," which was discussed by Drs. Edith Potter and Benjamin M. Kagan, Chicago.

Dr. George R. Krupp, Rockville Centre, N. Y., and Arnold P. Friedman, New York, presented a paper on, "Migraine in Children." This paper was discussed by Dr. Samuel Livingston, Baltimore.

Thursday, June 12—Morning

Joint Meeting with Section on Laryngology, Otology and Rhinology

Dr. Alden H. Miller, Los Angeles, read a paper on, "Incidence of Poliomyelitis in Tonsillectomized Patients."

Dr. James L. Wilson, Ann Arbor, Mich., read a paper on "Relationship of Tonsillectomy to Acute Bulbar Poliomyelitis."

Dr. Tom C. Galloway, Evanston, Ill., read a paper on "Danger of Ear, Nose, Throat and Other Operations in the Poliomyelitis Season."

Dr. Franklin H. Top, Minneapolis, read a paper on "The Occurrence of Poliomyelitis by Clinical Type Following Tonsillectomy in Persons at Various Time Intervals of Life."

Questions were answered by the essayists, and there was discussion by Drs. J. Milton Robb, Detroit, and George J. Boines, Wilmington, Del.

SECTION ON PHYSICAL MEDICINE AND REHABILITATION

Tuesday, June 10—Afternoon

The meeting was called to order at 2:05 p. m., by the vice chairman, Dr. Kristian G. Hansson, New York. The meeting was presided over after the reading of the first paper by the chairman, Dr. Howard A. Rusk, New York.

Dr. Ralph E. DeForest, Chicago, read a paper on, "The Council on Physical Medicine and Rehabilitation," which was discussed by Drs. Frank H. Krusen, Rochester, Minn., and Ralph E. DeForest.

Dr. Allen S. Russek, New York, read a paper on, "Scapulocostal Syndrome: The Pathology, Diagnosis and Treatment." This paper was discussed by Drs. Kristian G. Hansson and Allen S. Russek, New York.

Dr. Michael M. Dacso, New York, read a paper on, "Clinical Aspects of Geriatric Rehabilitation," which was discussed by Drs. Walter M. Solomon, Cleveland, and Leo Dobrin and Michael M. Dacso, New York.

Dr. O. Leonard Huddleston, Santa Monica, Calif., read a paper on, "What the Clinician Should Know About Electromyography," which was discussed by Drs. Arthur L. Watkins, Boston, and Howard A. Rusk, New York.

A paper on, "Cortisone in the Treatment of the Hemiplegic," was presented by Drs. Henry I. Russek, Staten Island, N. Y., Joseph G. Benton and Lee Greene, New York, and Burton L. Zohman, Brooklyn, and was discussed by Drs. S. M. Dorinson, San Francisco, Howard A. Rusk, New York, M. J. Glick, Miami Beach, Fla., and Joseph G. Benton, New York.

Wednesday, June 11—Afternoon

The following officers were elected: chairman, Dr. Kristian G. Hansson, New York; vice chairman, Dr. Walter M. Solomon, Cleveland; delegate, Dr. Frank H. Krusen, Rochester, Minn.; alternate delegate, Dr. Harold Dinken, Denver.

Dr. Howard A. Rusk, New York, read the chairman's address entitled, "Rehabilitation Pays Dividends."

Dr. George G. Deaver, New York, was the moderator of a symposium on cerebral palsy, which included the following speakers and subjects:

Dr. Meyer A. Perlstein, Chicago, read a paper on, "Differential Diagnostic Hints in Cerebral Palsy."

Dr. Harry E. Barnett, Chicago, read a paper on, "Surgical Procedures in Cerebral Palsy."

Dr. Harold Westlake, Evanston, Ill., read a paper on, "Speech Development in Cerebral Palsy."

Thursday, June 12—Morning

A joint meeting was held with the Section on General Practice. The proceedings are reported in the minutes of that section.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

TUESDAY, JUNE 10—MORNING

A joint meeting was held with the Section on Military Medicine and the Section on Radiology. The proceedings are reported in the minutes of the Section on Military Medicine.

WEDNESDAY, JUNE 11—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Carey P. McCord, Ann Arbor, Mich.

The following officers were elected: chairman, Dr. Vlado A. Getting, Boston; vice chairman, Dr. Jean S. Felton, Oak Ridge, Tenn.; secretary, Dr. Frank Princi, Cincinnati; delegate for two years, Dr. Rutherford T. Johnstone, Los Angeles; alternate delegate for two years, Dr. Roy L. Cleere, Denver; representative to Scientific Exhibit, Dr. Paul A. Davis, Akron, Ohio.

Dr. Carey P. McCord, Ann Arbor, Mich., read the chairman's address entitled, "The Acceptance of Industrial Medicine and Public Health Within the Medical Profession."

Dr. Katharine Williams, Harwell, England, read a paper on, "Some Aspects of Preventive Medicine in an Atomic Energy Establishment," which was discussed by Dr. R. J. Hasterlik, Chicago.

Dr. H. D. Storms, Santurce, Puerto Rico, read a paper on, "Rehabilitation in Puerto Rico," which was discussed by Dr. Josephine J. Buchanan, Washington, D. C.

Dr. Sven Forssman, Stockholm, Sweden, read a paper on, "Industrial Medicine in Sweden: Recent Experiences and Future Problems," which was discussed by Dr. A. J. Lanza, New York.

Dr. H. Graham Ross, Montreal, Canada, read a paper on, "Industrial Medicine in Canada." This paper was discussed by Dr. Clarence D. Selby, Ann Arbor, Mich.

Drs. Milton I. Roemer, Geneva, Switzerland, and Oswaldo L. da Costa, Washington, D. C., presented a paper on, "Occupational Health Activities of the World Health Organization."

Dr. R. E. W. Fisher, London, England, read a paper on, "Occupational Skin Cancer in Tar Workers: Report of a Survey." This paper was discussed by Drs. Leonard F. Weber, Chicago, and Oscar A. Sander, Milwaukee.

THURSDAY, JUNE 12—AFTERNOON

Dr. Russell M. Wilder, Bethesda, Md., read a paper on, "Arthritis as a Public Health Problem," which was discussed by Dr. E. F. Rosenberg, Chicago.

Dr. Bruno Gebhard, Cleveland, read a paper on, "Patient Education Through the Cleveland Health Museum: A 12 Year Review," which was discussed by Dr. Robert M. Stecher, Cleveland.

Dr. Walter Finke, Rochester, N. Y., read a paper on, "Public Health Aspects and Prevention of Bronchopulmonary Disease." This paper was discussed by Dr. Huston K. Spangler, Washington, D. C.

Dr. Robert M. Foote, Nashville, Tenn., read a paper on, "Public Health Aspects of the Speech and Hearing Problems." This paper was discussed by Drs. G. E. Shambaugh, Francis L. Lederer, and Edward Press, Chicago.

Dr. Jack C. Haldeman, Washington, D. C., presented a paper prepared by himself and Dr. J. W. Mountin, deceased, on, "State Health Organization Today and a Decade Ago." This paper was discussed by Dr. John C. Ayres, Boston.

Dr. William T. Doran Jr., Baltimore, presented a paper on, "The Adaptation of Public Health Techniques to Industrial Medicine," which was discussed by Dr. John Phair, Cincinnati.

SECTION ON RADIOLOGY

TUESDAY, JUNE 10—MORNING

A joint meeting was held with the Section on Military Medicine and the Section on Preventive and Industrial Medicine and Public Health. The proceedings are reported in the minutes of the Section on Military Medicine.

WEDNESDAY, JUNE 11—MORNING

The meeting was called to order at 9:10 a. m., by the chairman, Dr. Ira H. Lockwood, Kansas City, Mo.

The following officers were elected: chairman, Dr. Paul C. Hodges, Chicago; vice chairman, Dr. Kenneth D. A. Allen, Denver; secretary, Dr. Traian Luecutia, Detroit; delegate for two years; Dr. B. R. Kirklin, Rochester, Minn.; alternate delegate, Dr. Eugene P. Pendergrass, Philadelphia; representative to Scientific Exhibit, Dr. Richard H. Chamberlain, Philadelphia; and delegate to American Board of Radiology for six years, Dr. Leo G. Rigler, Minneapolis.

Dr. Ira H. Lockwood, Kansas City, Mo., presented the chairman's address, "Lymphosarcoma of the Gastrointestinal Tract."

A symposium on roentgen examination of the gallbladder and jaundice included the following topics.

A paper on "Roentgen Examination of the Gallbladder Without Opacification," was presented by Dr. Clyde A. Stevenson, Temple, Texas.

Drs. B. R. Kirklin and D. B. O'Donnell, Rochester, Minn., presented a paper on, "Present Day Cholecystography."

Drs. Raymond C. Beeler and John W. Beeler, Indianapolis, presented a paper on, "Barium Study as an Aid in the Differential Diagnosis of Jaundice."

A paper on "Preoperative and Postoperative Cholangiography," was presented by Drs. Everett L. Pirkey, Lawrence A. Davis, and Lawrence A. Pilla, Louisville.

Drs. Russell H. Morgan, Mark Ravitch, and Ralph E. Sturm, Baltimore, presented a paper on, "The Reduction of Intussusception by Barium Enema."

The papers presented in the symposium were discussed by Drs. Edward L. Jenkinson, Chicago, Bruce C. Lockwood, Detroit, Arthur H. Joistad Jr., Muskegon, Mich., James C. Drye, Louisville, Ky., Fred J. Hodges, Ann Arbor, Mich., Samuel Brown, Cincinnati, and S. F. Thomas, Palo Alto, Calif.

THURSDAY, JUNE 12—MORNING

The meeting was called to order at 9:15 a. m. by the newly elected chairman, Dr. Paul C. Hodges, Chicago.

Dr. Franz J. Buschke, Seattle, presented a paper on, "The Role of Common Sense in Cancer Therapy," which was discussed by Dr. Erich M. Uhlmann, Chicago.

Dr. Lee A. Hadley, Syracuse, N. Y., presented a paper on, "Spondylolisthesis Studies," which was discussed by Dr. Maurice B. Roche, St. Louis.

Drs. Hirsch Marks, New York, and George Rudinger, Buffalo, presented a paper on, "Roentgen Therapy of Advanced Carcinoma with the Use of Grid: Comparative Results with Other Methods: Some Considerations of the Physical Factors in Grid Therapy." This paper was discussed by Dr. Theodore J. Wachowski, Wheaton, Ill.

A paper entitled, "A Method for Measuring Cardiac and Peripheral Vascular Flow Utilizing Serum Albumin Labelled with Radioactive Iodine," was presented by Drs. H. L. Friedell, W. J. MacIntyre, W. D. Holden, and W. H. Pritchard, Cleveland.

Dr. Robert J. Moon, Chicago, presented a paper on, "The Present Status of the Scanning X-Ray System."

Drs. Lawrence Reynolds, K. E. Corrigan, and H. S. Hayden, Detroit, presented a paper on, "Detection of Concealed Thyroid Disease by Tracer Technic."

Drs. Dwight E. Clark, James Rule, and David A. Cofrin, Chicago, presented a paper entitled, "A Five Year Experience with Radioactive Iodine in the Treatment of Hyperthyroidism."

These four papers were discussed by Drs. Louis N. Katz and Paul C. Hodges, Chicago, Z. S. Gierlach, Louisville, Ky., Wendell G. Scott, St. Louis, and Harry Bergman, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

Tuesday, June 10—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. I. Mims Gage, New Orleans.

Drs. James W. Hendrick, San Antonio, Texas, and Grant E. Ward, Baltimore, presented a paper on "Treatment of Intraoral Malignancy," which was discussed by Drs. Danely P. Slaughter, Chicago, John B. Erick, Rochester, Minn., and Walter W. Carroll, Chicago.

Drs. Michael E. DeBakey, John Heaney, and Oscar Creech, Houston, Texas, presented a paper on, "Surgical Considerations of Diverticula of the Esophagus." This paper was discussed by Drs. Frank H. Lahey, Boston, and Stuart W. Harrington, Rochester, Minn.

Dr. Richard H. Sweet, Boston, read a paper on "The Diagnosis and Treatment of Hiatus Hernia of the Diaphragm," which was discussed by Drs. William P. Chapman, Boston, and Conrad R. Lam, Detroit.

Dr. Alfred Blalock, Baltimore, read a paper on "William Stewart Halsted: An Appreciation on the Centenary of His Birth." This paper was discussed by Drs. Emile F. Holman, San Francisco, and James F. Mitchell, Washington, D. C.

Dr. Charles F. Hobelmann, Baltimore, read a paper on [illegible]l Anesthesia for Abdominal Surgery," which was discussed [illegible] Drs. George S. Hopkins, Topeka, Kan., and James E. Ecken[illegible]ff, Philadelphia.

Dr. Charles D. Branch, Peoria, Ill., read a paper on "Inflammatory Lesion of the Colon Simulating Neoplasms," which was discussed by Drs. B. M. Black, Rochester, Minn., and Richard K. Gilchrist, Chicago.

Wednesday, June 11—Morning

The following officers were elected: chairman, Dr. I. Ridgeway Trimble, Baltimore; vice chairman, Dr. Frank L. A. Gerbode, San Francisco; secretary, Dr. Walter G. Maddock, Chicago; representative to Scientific Exhibit, Dr. John H. Mulholland, New York; representatives to American Board of Surgery, Drs. Gustaf E. Lindskog, New Haven, Conn., and James D. Rives, New Orleans; representative to American Board of Neurosurgery, Dr. Eldridge H. Campbell, Albany, N. Y.

Dr. I. Mims Gage, New Orleans, read the chairman's address on "The Hidden Thrombus of Fatal Pulmonary Embolism."

Drs. William F. Rienhoff Jr. and Alan C. Woods Jr., Baltimore, presented a paper on "Ligation of the Primary Hepatic Splenic and Left Gastric Arteries in the Treatment of Intrahepatic Portal Hypertension."

Dr. Nicholas A. Michels, Philadelphia, read a paper on "The Hepatic, Cystic, and Retroduodenal Arteries and Their Relations to the Biliary Ducts."

These two papers were discussed by Drs. Philip Thorek, Chicago, Arthur H. Blakemore, New York, Michael E. DeBakey, Houston, Texas, Warren H. Cole, Chicago, Robert R. Linton, Brookline, Mass., I. S. Ravdin, Philadelphia, and James W. Hendrick, San Antonio, Texas.

Dr. Gerald H. Pratt, New York, read a paper on "Surgical Correction of Lymphedema," which was discussed by Drs. Emile F. Holman, San Francisco, Harris B. Shumacker Jr., Indianapolis, and Alton Ochsner, New Orleans.

Dr. Jere W. Lord Jr., New York, read a paper on "The Surgical Management of the Shoulder Girdle Syndromes, Hyperabduction, Costoclavicular, Cervical Rib, and Scalenus Anticus: A New Operative Procedure." This paper was discussed by Drs. J. Ross Veal, Washington, D. C., and Harris B. Shumacker Jr., Indianapolis.

Thursday, June 12—Morning

Drs. James T. Priestley, Randall G. Sprague, and Walter F. Kvale, Rochester, Minn., presented a paper on "Surgical Lesions of the Adrenal Glands," which was discussed by Drs. Charles B. Huggins and Richard L. Landau, Chicago.

Drs. Leonard J. Druckerman, Vernon A. Weinstein, Percy Klingenstein and Ralph Colp, New York, read a paper on "Duodenal Ulcer Treated by Subtotal Gastrectomy With and Without Vagotomy." This paper was discussed by Drs. Karl A. Meyer, Chicago, and Reginald H. Smithwick, Boston.

Drs. Henry N. Harkins, Ralph Schlosser, Horace G. Moore, J. K. Stevenson, E. H. Storer, Lester R. Sauvage, E. J. Schmitz, Edmund A. Kanar, and H. H. Olson, Seattle, presented a paper on "The Billroth 1 and 2 Methods of Subtotal Gastrectomy for Duodenal Ulcer: A Clinical and Experimental Evaluation." This paper was discussed by Drs. Alfred A. Strauss, Chicago, John M. Waugh, Rochester, Minn., Jerry Zaslow, Philadelphia, M. E. Steinberg, Portland, Ore., I. S. Ravdin, Philadelphia, and Paul Kiernan, Washington, D. C.

Drs. L. Kraeer Ferguson and Donald R. Cooper, Philadelphia, presented a paper on "Gastric Resection in the Treatment of Upper Gastro-Intestinal Hemorrhage of Undetermined Etiology." This paper was discussed by Drs. I. Ridgeway Trimble, Baltimore, Frank H. Lahey, Boston, and M. E. Steinberg, Portland, Ore.

Dr. William A. Cooper and George N. Papanicolaou, New York, presented a paper on "The Balloon Technique in the Cytologic Diagnosis of Gastric Cancer," which was discussed by Drs. Walter G. Maddock and Elizabeth A. McGrew, Chicago.

Dr. Frederick F. Boyce, New Orleans, read a paper on "Carcinoma of the Stomach in a Large General Hospital," which was discussed by Drs. Champ Lyons, Birmingham, Ala., Waltman Walters, Rochester, Minn., and Alton Ochsner, New Orleans.

SECTION ON UROLOGY

Tuesday, June 10—Afternoon

The meeting was called to order at 2 o'clock by the secretary, Dr. Earl E. Ewert, Boston.

Dr. Warren O. Nelson, Iowa City, read a paper on "Interpretation of the Testicular Biopsy."

Dr. Wyland F. Leadbetter, Boston, presented a paper on "The Treatment of Testis Tumors and Their Pathologic Characteristics."

Drs. Myer M. Melicow and J. W. Hollowell, New York, presented a paper on "Intraurothelial Cancer, Carcinoma in Situ, Bowen's Disease of the Urinary System: Review of Thirty Cases."

Drs. Arthur J. Butt, Pensacola, Fla., Ernest A. Hauser, Cambridge, Mass., Joseph Seifter, Philadelphia, and Joseph Q. Perry, Pensacola, Fla., presented a paper on "Treatment and Prevention of Kidney Stones by Increasing the Protective Urinary Colloids with Hyaluronidase."

Drs. Edwin L. Prien, Brookline, Mass., and J. A. Carr, London, England, presented a paper on "Prevention of Urinary Calculi in the Bedridden Patient."

Dr. W. E. Kittredge, New Orleans, read a paper on "Management of Ureteral Calculi."

Dr. E. Humber Burford, St. Louis, read a paper on "A Critical Survey of the Management of Ureteral Calculi."

The papers of Dr. Leadbetter, Drs. Melicow and Hollowell, Drs. Prien and Carr, and Dr. Kittredge were discussed by Drs. J. C. Kimbrough, Washington, D. C., Leander W. Riba, Chicago, James C. Sargent, Milwaukee, and Michael G. O'Brien, Scranton, Pa.

Wednesday, June 11—Afternoon

The following officers were elected: chairman, Dr. Earl E. Ewert, Boston; vice chairman, Dr. Rex E. Van Duzen, Dallas, Texas; secretary, Dr. Reuben H. Flocks, Iowa City; delegate, Dr. Jay J. Crane, Los Angeles; alternate delegate, Dr. Rex E. Van Duzen, Dallas, Texas; representative to Scientific Exhibit, Dr. Norris J. Heckel, Chicago.

Dr. John R. Hand, Portland, Ore., gave the chairman's address.

Dr. Lowrain E. McCrea, Philadelphia, read a paper on "A New Concept of the Vesical Innervation: Its Relationship to the Bladder Management Following Abdomino-Perineal Proctosigmoidectomy."

Drs. Jack Lapides and Austin I. Dodson Jr., Ann Arbor, Mich., presented a paper on "Observation on the Effect of Banthine in Urological Disturbances."

The papers presented by Dr. McCrea and Drs. Lapides and Dodson were discussed by Drs. Joseph H. Kiefer and William J. Baker, Chicago.

Dr. C. D. Creevy, Minneapolis, read a paper on "Facts Concerning Uterosigmoidostomy."

Drs. Fred E. B. Foley and Edward J. Richardson Jr., St. Paul, presented a paper on "Massive Electrocoagulation of Deeply Infiltrating Bladder Tumors Combined with Ligation of the Vena Cava for Prevention of Pulmonary Embolism."

Dr. Alexander Slavcoff, Harrisburg, Pa., read a paper on "Recto-Urethral Fistula."

These three papers were discussed by Drs. Charles C. Higgins, Cleveland, and Raymond G. Bunge, Iowa City.

Thursday, June 12—Afternoon

Dr. Edward M. Honke, Sioux City, Iowa, read a paper on "Surgical Consideration of Vesical Neck Obstruction in Females."

Dr. Thomas L. Pool, Rochester, Minn., read a paper on "Urologic Problems in the Female."

These two papers were discussed by Drs. James W. Merricks, Chicago, and James I. Farrell, Evanston, Ill.

Dr. John K. Lattimer, New York, read a paper on "New Developments in the Chemotherapy of Renal Tuberculosis."

Dr. Francis H. Redewill, San Francisco, read a paper on "Malacoplakia of the Bladder Compared to Generalized Sarcoidosis: Report of Additional Cases, Pathology, New Treatment."

Drs. Francis G. Harrison and Francis G. Harrison Jr., Philadelphia, presented a paper on "Hematuria with Sickle Cell Disease."

These three papers were discussed by Drs. Frederick A. Lloyd, Russell D. Herrold and J. S. Grove, Chicago.

Drs. John Duff and Thomas A. Morrissey, New York, presented a paper on "Bilateral Simultaneous Retroperitoneal Pneumography."

Dr. Charles M. Stewart, Los Angeles, read a paper on "Delayed Cystograms."

Dr. J. Sydney Ritter, New York, read a paper on "Pneumography as Applied to Urology."

These three papers were discussed by Drs. Irving J. Shapiro, Chicago, and Charles G. Weller, Aurora, Ill.

STATE MEDICAL LEGISLATION

Louisiana

Bills Introduced.—H. 219, to repeal and reenact the law relating to depositions and discovery, proposes, among other things, that in an action in which the mental or physical condition of a party is in controversy, the court in which the action is pending or in which the judgment was originally rendered may order him to submit to a **physical or mental examination by a physician.** The order may be made only on motion for good cause shown and upon notice to the party to be examined and to all other parties and shall specify the time, place, manner, conditions, and scope of the examination, and the person or persons by whom it is to be made. Reports of such examinations shall be delivered to the person examined, or else the results of the examination may not be used as evidence in the trial. H. 526, proposes the establishment of a **Louisiana Board of Institutions** in which would be consolidated the functions of the State Hospital Board and various other similar commissions, agencies, and institutions in the state. S. 119, proposes regulations for the **licensing of dispensing opticians** and defines a dispensing optician as one who prepares and dispenses lenses, spectacles, and eyeglasses to the intended user thereof on the prescription of a physician or optometrist, duly licensed to practice his profession and, in accordance with such prescriptions, measures, adapts, fits, and adjusts such lenses, spectacles, and eyeglasses to the human face for the correction of visual or ocular anomalies of the human eyes. A dispensing optician would be prohibited from engaging in the diagnosis of the disease of the human eye or attempting to determine the refractive powers or visual skills of the human eye, or, in any manner, attempting to prescribe for or treat diseases of the eye or to engage in the practice of optometry. To administer the regulations there would be created a Louisiana State Board of Dispensing Opticians.

Bills Enacted.—H. 525, has become Act No. 48 of the Acts of 1952. It creates a **Louisiana Board of Institutions** to take over the functions of the State Hospital Board and a number of other Louisiana commissions, agencies, and institutions. H. 1058, has become Act No. 49 of the Laws of 1952. It designated March 30 as **Doctors' Day** throughout the State of Louisiana, in honor of the medical profession of the State. S. 91, has become Act No. 53 of the Acts of 1952. It amends the **Medical Practice Act** relative to fees that may be charged by the Louisiana State Board of Medical Examiners.

Massachusetts

Bills Enacted.—CCH Senate Bill No. 2, was adopted June 23, 1952. It orders the committee on the judiciary to make an investigation and study relative to the evidential value of certain **blood tests** in connection with the trial of persons charged with **operating a motor vehicle** while under the influence of intoxicating liquor. S. 288, has become Chapter 296 of the Laws of 1952. It authorizes **medical service plans** to contract with the trustees of the Soldiers' Home in Massachusetts to provide payment for surgical, dental, or medical services of veterans who are eligible to receive the benefits of the services of such Soldiers' Homes.

New Jersey

Bills Enacted.—A. 549, has become Chapter 351 of the Laws of 1952. It amends the law relating to the practice of pharmacy, by, among other things, defining **"prescription"** as an order for drugs or medicines or combinations or mixtures thereof, written or signed by a duly licensed physician, dentist, veterinarian, or other medical practitioner licensed to write prescriptions intended for the treatment or prevention of disease in man or animals, and includes orders for drugs or medicines or combinations or mixtures thereof transmitted to pharmacists through word of mouth, telephone, telegraph, or other means of communication by a duly licensed physician, dentist, veterinarian, or other medical practitioner licensed to write prescriptions intended for the treatment or prevention of disease in man or animals, and such prescriptions received by word of mouth, telephone, telegraph, or other means of communication shall be recorded in writing by the pharmacist and the record so made by the pharmacist shall constitute the original prescription to be filed by the pharmacist; provided that no prescription for any narcotic drug shall be given or transmitted to pharmacists in any manner other than in writing signed by the physician, dentist, veterinarian, or other practitioner giving or transmitting the same nor shall such prescription be renewed or refilled. A. 555, has become Chapter 352 of the Laws of 1952. It provides a licensing law for the licensing and examination of **professional and practical nursing.** S. 28, has become Chapter 300 of the Laws of 1952. It amends the **Medical Practice Act** in relation to the fine that may be recovered for a violation of such act. S. 147, has become Chapter 336 of the Laws of 1952. It provides for the regulation of the **practice of ophthalmic dispensing** by providing for the issuance of certificates to registered qualified ophthalmic dispensers and ophthalmic technicians.

Prepared by the Bureau of Legal Medicine and Legislation.

MEDICAL NEWS

ARKANSAS

Society News.—At its annual session in Little Rock April 20 the Arkansas Academy of General Practice elected Dr. Harry E. Murry, Texarkana, president; Dr. Ralph G. Kramer, Fort Smith, president-elect; Dr. James M. Kolb, Clarksville, vice-president; and Dr. Columbus R. Ellis, Malvern, secretary-treasurer.

State Medical Election.—At the annual meeting of the Arkansas Medical Society in Little Rock, April 21-23, Dr. Sherod A. Drennen, Stuttgart, was installed as president; Dr. Richard C. Dickinson, Horatio, was chosen president-elect; Dr. Daniel H. Autry, Little Rock, treasurer; and Dr. William R. Brooksher, Fort Smith, secretary.

CALIFORNIA

University News.—Wendell M. Stanley, Ph.D., Nobel Laureate and director of the virus and biochemistry laboratory on the Berkeley campus of the University of California, has been appointed to a four year term on the National Cancer Advisory Council.

Dr. Hara Addresses Japanese Meetings.—Dr. H. James Hara, director of graduate study in otolaryngology, College of Medical Evangelists, Los Angeles, held a series of clinical otolaryngological conferences and lectures at the annual meeting of the Japan Oto-Rhino-Laryngological Society in Sendai, May 2-4.

Hospital News.—Dr. J. La Monte Zundell has joined the medical staff of St. Francis Hospital, San Francisco, as director of pathology and clinical laboratories. Dr. Zundell was recently director of laboratories at the U. S. Naval Hospital in Oakland and previously held the same position in naval hospitals in Long Beach, Chelsea, Mass., and at the Naval Medical School in Bethesda, Md. Dr. David A. Wood, director of the Cancer Research Institute and professor of pathology at the University of California, will serve as chief consultant in pathology at the hospital.

CONNECTICUT

Hospital News.—Sixty-five members of the staff of the New Britain General Hospital have contributed $105,000 to a $600,000 fund for a new hospital wing. Plans call for a total expenditure of $1,500,000, of which $900,000 has been raised.

Fifty Year Pins Presented.—At the annual dinner of the Connecticut State Medical Society in Hartford, April 30, pins indicating 50 years of active membership in the society were presented to Drs. Millard F. Allen of New Haven (in absentia), William T. Bronson of Danbury, Patrick J. Dwyer of Waterbury, and Charles O. Purinton of New Hartford (in absentia).

Prizes for Art Work.—At the 1952 exhibit of the Connecticut Physicians Art Association Dr. William W. Wright, West Hartford, was awarded the prize for the best entry. H. Saxton Burr, Ph.D., New Haven, took first prize in the landscape classification, and Dr. Harry E. Allen, Waterbury, was given honorable mention. Dr. Walter Grossmann, Hartford, ranked first in the portrait competitions.

DISTRICT OF COLUMBIA

Arthritis Clinic.—George C. Kenney, president of the Arthritis and Rheumatism Foundation, announces that an outpatient clinic for the treatment of early cases of arthritis has been established at Freedmen's Hospital in Washington, D. C. Dr. James A. Watson is in charge of the reorganized Freedmen's Hospital Arthritis Clinic.

Fellowship in Child Psychiatry.—The child center of the department of psychology and psychiatry, Catholic University of America, Washington, D. C., announces one fellowship in child psychiatry for physicians who have completed one year of internship and one year of psychiatric training under supervision approved for the American Board of Psychiatry and Neurology. For information, write Director, Child Center, Catholic University of America, Washington 17, D. C.

FLORIDA

Society News.—At the annual spring meeting of the Florida Radiological Society, Dr. Thomas H. Lipscomb of Jacksonville was elected president; Dr. Nelson T. Pearson of Miami, vice-president; and Dr. A. Judson Graves, Jacksonville, secretary-treasurer.

State Medical Election.—At its annual meeting in Hollywood, April 29-30, the Florida Medical Association installed Dr. Robert B. McIver, Jacksonville, as president; elected Dr. Frederick K. Herpel, West Palm Beach, president-elect; and re-elected Dr. Samuel M. Day, Jacksonville, editor of the *Journal of the Florida Medical Association.*

Personals.—Dr. Carlos P. Lamar, Miami, addressed the First Inter-American Conference on Gastroenterology recently in Mexico City on "The Control and Management of Diabetes Mellitus in the U. S. A."——Dr. David Sloane recently resigned as chief of the orthopedic service of the Veterans Administration Hospital at Lake City, and has entered private practice in Orlando.

ILLINOIS

Society News.—The Illinois Radiological Society recently elected Dr. William DeHollander, Springfield, president; Dr. Gordon M. Perisho, Quincy, vice-president; and Dr. Stephen L. Casper, Quincy, secretary-treasurer.

Roscoe Miller Honored.—At its annual meeting, June 11, the Alumni Association of Northwestern University bestowed on Dr. J. Roscoe Miller of Evanston, president of the university, its highest honor, the Alumni Medal. The award was conferred for his "eminence in medical research and educational circles." Dr. Miller, who received his medical degree from Northwestern University Medical School, Chicago, in 1930, served the medical school successively as assistant dean, dean, assistant professor, associate professor, and professor of medicine. He was made president of Northwestern University in 1949.

Chicago

University News.—Dr. Huberta M. Livingstone has resigned as chief of anesthesiology at the University of Chicago Clinics. She has been on the surgical staff of the University of Chicago since 1928 and was recently awarded an honorary key by the medical alumni of the university.

Sudent Aid Fund in Honor of Dr. Poncher.—The 1952 senior class of the University of Illinois College of Medicine has established a Medical Student Aid Fund in honor of Dr. Henry G. Poncher, professor of pediatrics and head of the department. It is anticipated that students who receive gifts from this source will make contributions to the fund when financially able. Dr. Poncher's resignation from the faculty becomes effective Aug. 1, when he will enter private practice (see The Journal, March 22, p. 1040).

Dr. Oldberg Named Symphony President.—The Orchestra Association of Chicago has chosen as its president Dr. Eric Oldberg, head of the department of neurology and neurological surgery at the University of Illinois College of Medicine. Dr. Oldberg is an associate editor of the *Journal of Neuropathology,*

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

a director of the John Crerar Library, vice-president of National Medical Fellowships, and governing life member of the Art Institute of Chicago. He has been a member of the Chicago Symphony's governing body since 1940 and vice-president since 1948.

Personals.—Dr. Thomas J. Coogan was elected president of the St. Louis University School of Medicine Alumni Association at its annual meeting in Chicago June 10.——Dr. Emanuel Marcus, associate in surgery, Chicago Medical School, was recently awarded the Chicago Surgical Society prize for 1952 for his research work on "Homologous Heart Grafts."——At the annual meeting of the medical alumni of the University of Chicago, June 11, Dr. Walter Lincoln Palmer, Chicago, was installed as president.

INDIANA

University News.—Dr. John D. Van Nuys, dean, Indiana University School of Medicine, Indianapolis, was awarded an honorary doctor of science degree by Wabash College, Crawfordsville, on June 8.——Dr. George J. Garceau, professor of orthopedic surgery, Indiana University School of Medicine, Indianapolis, addressed the Joint Meeting of the English Speaking Orthopedic Associations in London on "Filum Terminale Syndrome."——Dr. Edwin A. Lawrence, professor of surgery, Indiana University School of Medicine, Indianapolis, discussed "Problems in Gastrointestinal Cancer" on three cancer programs held in June by the Louisiana Academy of General Practice at Independence, Alexandria, and Shreveport.

IOWA

Three Physicians Honored.—During the annual meeting of the Iowa State Medical Society three physicians were honored for their contributions to organized medicine. Dr. Daniel J. Glomset, Des Moines, was commended for his research on cardiac conduction systems and in establishment of the Iowa State Medical Society's Speakers Bureau. Dr. Walter A. Sternberg, Mount Pleasant, received his award for positions of importance within the organization of the society. Dr. John T. McClintock, Iowa City, was cited for contributions while a professor in the State University of Iowa College of Medicine, Iowa City.

MAINE

State Society Awards.—At the annual banquet, June 24, the Maine Medical Association presented 50 year lapel pins to the following members who were graduated from medical school in 1902: Drs. Franklin A. Ferguson, Portland; James G. S. Jamieson, Portland; Charles H. Leach, Tenants Harbor; and Richard H. Stubbs, Augusta. Sixty year bars were bestowed on the following members, who received 50 year medals in 1942: Drs. Verdeil O. White, Springvale, and Eugene L. Stevens, Belfast. The following members, who received 50 year medals in June, 1947, were awarded 55 year bars: Drs. Louis N. Albert, Van Buren; Louis B. Hayden, Livermore Falls; Clarence C. Peaslee, Portland; and Ward J. Renwick, Auburn.

MASSACHUSETTS

Personal.—The president and fellows of Harvard College, at its 316th commencement June 19, 1952, awarded the honorary degree of doctor of science to Brig. Gen. James Stevens Simmons, U. S. Army (ret.) dean of the Harvard School of Public Health, Boston.

Shattuck Award.—At the annual meeting of the Massachusetts Public Health Association in Boston, April 24, the third Lemuel Shattuck Award was conferred on Prof. Curtis Morrison Hilliard, head of the department of biology and public health at Simmons College, Boston. In presenting the award, his activities in the Red Cross, the Massachusetts Tuberculosis and Health League, the National Tuberculosis Association, the Massachusetts Civic League, and the Massachusetts Public Health Association were listed as those of one who is "an example of what a high-minded citizen and public servant should be."

MICHIGAN

McGraw Lecture.—The annual McGraw Lecture was given May 13 by Dr. Warren H. Cole, professor of surgery, University of Illinois, Chicago, on "Residency Training Programs." The lectureship was established in 1948 by the Detroit Surgical Association in honor of the late Dr. Theodore Andrews McGraw, a founder and first professor of surgery at Detroit College of Medicine, now Wayne University College of Medicine.

Urgent Need for Volunteers.—Three well baby clinics operated by the Detroit Department of Health at Herman Kiefer Health Center, North End Clinic, and St. Antoine Health Center have closed because of the lack of volunteer physicians to staff these clinics. Any physician who can volunteer is requested to call Dr. Charles P. Anderson, WO 5-3000. Each clinic lasts about an hour, and there is a token payment of $5 per clinic session. The closed clinics are in a section of the city where there is need for preventive medicine for the indigent.

MINNESOTA

Psittacine Regulation Rescinded.—Minnesota State Health Regulation Number 2200, which prohibited the importation, purchase, breeding, sale, or giving away of birds of the psittacine family, was rescinded as of May 23 by the state board of health. Reasons for the action were: 1. Psittacosis is now known to be widespread among birds that are not members of the psittacine family. 2. Regulations of this type are difficult to enforce. 3. Psittacosis usually responds rapidly to antibiotic treatment, and there now is less danger of serious illness and complications from the disease.

MISSOURI

University News.—Norman M. Sulkin, Ph.D., associate professor of anatomy, St. Louis University School of Medicine, will join the staff of Bowman-Gray School of Medicine of Wake Forest College, Winston-Salem, N. C., on Aug. 1, as associate professor of anatomy. He came to St. Louis University in 1946.

Poliomyelitis Grants.—March of Dimes grants totaling $55,565 have been awarded to scientists of Washington University School of Medicine, St. Louis, for research in fields related to poliomyelitis. The largest grant, $27,875, will enable scientists under the direction of Dr. James O. Elam, assistant professor of anesthesiology, to investigate the circulatory collapse that may occur in fatal cases of bulbar polio. A grant of $13,241 was made to a project headed by Dr. James Lee O'Leary, professor of neurology, to investigate respiratory difficulties arising from damage to nerve centers in the brain. Investigators also hope to gather data that will lead to early recognition of impending breathing difficulties. A grant of $7,669 has been assigned to Dr. Robert A. Moore, dean of the medical school, for continuation of the teaching and service programs of the division of physical medicine, and the final grant of $6,750 will enable scientists under Dr. Carl F. Cori, professor of biological chemistry and a Nobel prize winner, to attempt to purify a key enzyme of the brain involved in the metabolism of nerve tissue.

NEW HAMPSHIRE

New Faulkner House.—On May 14, open house was held at Faulkner House, a unit of Mary Hitchcock Memorial Hospital at Hanover. The new Faulkner House, latest $2 million unit of a three year building program, provides a department of physical medicine, central supply, piped oxygen and suction to each bed, and a postanesthesia ward. Its 120 beds bring the total hospital bed capacity to 325. The old Clinic Building will be used as a residence for interns and residents.

The Mary Hitchcock Memorial Hospital is a regional installation with more than 90% of its admissions referred by physicians outside the immediate Hanover area and located in communities in New Hampshire and Vermont. While it more directly serves the upper Connecticut River Valley a large number of persons from the rest of New Hampshire use its services. Mary Hitchcock Memorial Hospital has grown from a 36 bed institution in 1893 to its present position as the hub of a regional medical center.

NEW JERSEY

Dr. Lahey to Deliver Memorial Lecture.—On Oct. 1 Dr. Frank H. Lahey of Boston will deliver the second annual Frank C. Henry Jr. Memorial Lecture on "Newer Developments as to the Origin and Treatment of Thyroid Disease." The lecture is in tribute to the late chief of surgery of Perth Amboy General Hospital, who was killed in an automobile accident March 6, 1951. It is held under the sponsorship of the Academy of Medicine of the Raritan Bay area. Early reservations for the lecture and for the dinner that will precede it are recommended. Reservations may be made through the Academy of Medicine of the Raritan Bay Area, 18 Green St., Woodbridge, N. J.; telephone Woodbridge 8-1710.

Personals.—Dr. William O. Wuester, Elizabeth, was recently named the 1952 recipient of the Edward J. Ill Award of the Academy of Medicine of Northern New Jersey. The award, which honors the memory of the late Dr. Ill of Newark, is given periodically to a physician who besides achieving prominence in medicine also participates actively in community affairs.——Dr. Hyman I. Goldstein, Camden, addressed the Third Pan-American Congress of Gastroenterology and the First National Mexican Congress of Gastroenterology at their joint meeting in Mexico City on pancreatic and hepatobiliary tract diseases and lectured on gallbladder and liver diseases at the National University of Mexico and before the Society of Cardiology, Mexico City.

NEW YORK

Appoint Staff Members to Meet Intern Shortage.—The Rochester General Hospital, being faced with a shortage of interns, has met the needs of its emergency department by appointing a panel of staff members to cover, without remuneration, the uncovered days and nights.

Society Elections.—The new Westchester Radiological Society chose Dr. Walter J. Brown, Mount Kisco, secretary-treasurer.——At a recent meeting of the Northeastern New York Radiological Society Dr. Orville L. Henderson, Troy, was elected president; Dr. Joseph Rosenstein, Saranac Lake, vice-president; and Dr. John Roach, Albany, secretary-treasurer.

Personals.—Dr. Christopher Fletcher, director of the Buffalo State Hospital, recently retired after 40 years of service with the hospital.——Dr. Charles Buckman, assistant commissioner of the State Department of Mental Hygiene, has been transferred to Kings Park State Hospital, as senior director to fill the vacancy created by the retirement of Dr. Arthur E. Soper. Dr. James A. Brussel, assistant director of Willard State Hospital, who succeeds Dr. Buckman as assistant commissioner, will be in charge of the New York City office of the department.——In recognition of her efforts in the advancement of women in medicine the 1952 award of the New York State Women's Medical Society has been bestowed on Dr. Madge C. L. McGuinness, New York, veteran member of the house of delegates of the Medical Society of the State of New York.——Dr. Louis H. Bauer, Hempstead, L. I., President of the American Medical Association, has been reelected chairman of the National Civilian Consultants Conference to the Air Force Surgeon General.

New York City

Alumni Awards.—At the alumni day celebration of Mount Sinai Hospital on April 19, the following physicians, named "alumni men of the year," received medallions: Dr. Joseph H. Globus, editor of the *Journal of Mount Sinai Hospital;* Dr. Sadao Otani, associate professor of pathology, Columbia University; Dr. Leo Edelman, administrator of the hospital's sick benefit fund; Dr. Elmer S. Gais; Dr. Abraham Hyman, chairman of the alumni loan fund; and Dr. Arthur M. Master, president of the New York County Medical Society.

Ambulance Service for Premature Babies.—The Hospital Council of Greater New York reports that the ambulance service for premature babies, set up by the city in 1948, has resulted in a substantial decrease in the mortality of premature infants. The service, conducted by the department of health, provides free ambulances to transport premature babies to special nurseries in selected hospitals.

According to the report of the council, among all premature babies born in 1949 who weighed less than 1,000 gm. at birth, 95.3% died in the first month of life. The neonatal mortality of premature babies of similar weight who were transported to special centers was 70.2%.

Community Service Project.—At a recent dinner meeting of the Community Service Society Dr. Martin Cherkasky, director of Montefiore Hospital, reported that the family health maintenance demonstration would have to run for at least five years before substantial results could be obtained. The project, which is being handled jointly by the Community Service Society, Montefiore Hospital, and the College of Physicians and Surgeons of Columbia University, is dedicated to showing families how to keep well. It is felt that the pilot scheme, under which 20 families were studied within the last 12 months, warrants the enlistment of about 100 families by the end of this year and between 200 and 300 some time next year, with an average of 4 persons in each family. Each member of the family receives physical examinations. Interviews by social workers, inspection of the home by public health nurses, and tests by psychologists are followed by consultations among the team experts and the families to iron out trouble. The society maintains headquarters at 105 E. 21st St.

NORTH CAROLINA

Service for Children.—Six North Carolina children, all of whom have undergone plastic surgery at Duke Hospital, Durham, are attending a six week summer session for children with harelip or cleft palate at the hospital. The new service is part of a program to develop better treatment methods. The crippled children's section of the State Board of Health will pay medical costs for the six children at the hospital, and local welfare departments are paying for room, board, and transportation.

OHIO

Personal.—Dr. Martin H. Fischer, professor emeritus of physiology, University of Cincinnati College of Medicine, recently was given the Ohio Award for 1952 by the Ohio Chapter of the American Institute of Chemists. Dr. Fischer spoke on "Molecules, Medicine, and Men."

State Medical Election.—At the annual meeting of the Ohio State Medical Association in Cleveland, May 20-22, Dr. Harve M. Clodfelter, Columbus, was installed as president. Dr. Paul A. Davis, Akron, was chosen president-elect, and Dr. Richard L. Meiling, Columbus, was elected treasurer. The 1953 annual meeting will be held in Cincinnati, April 21-23.

OKLAHOMA

Cancer Detection Clinic.—The Garfield-Kingfisher County Medical Society has accepted the offer by the Enid General Hospital of a suite of rooms to house a permanent cancer detection clinic in Enid. Each patient must be referred by his physician, who will indicate whether he wishes the patient to be referred back to him or sent to the University Hospital at Oklahoma City or to a local hospital for treatment. The clinic will be operated strictly on a nonfee basis; all professional services, including the services of an x-ray technician, will be donated. The only salaried worker will be the keeper of the records. The cooperation and participation of all physicians in this area, including oral surgeons of the dental profession, is requested. As soon as practicable each will be invited to take turns at duties in the clinic.

SOUTH CAROLINA

State Medical Election.—The South Carolina Medical Association has chosen as president Dr. Lawrence Thackston, of Orangeburg. Dr. Charles R. F. Baker of Sumter is president-elect; Dr. George D. Johnson of Spartanburg, vice-president; and Dr. Robert Wilson Jr., of Charleston, secretary.

TENNESSEE

Personal.—John L. Wood, Ph.D., professor of chemistry, University of Tennessee Medical Units, Memphis, became head of the department of biochemistry on July 1. Dr. Wood is also a consultant to the medical division of Oak Ridge Institute of Nuclear Studies at Oak Ridge.

University News.—Dr. Elliot Voss Newman has been appointed Joe and Morris Werthan Professor of Experimental Medicine at Vanderbilt University School of Medicine, Nashville. Dr. Newman was formerly associate professor of medicine at Johns Hopkins University School of Medicine, Baltimore.——Dr. Charles Rawlinson Park has been appointed head of the physiology department at Vanderbilt University School of Medicine, Nashville, succeeding Charles E. King, Ph.D., who requested relief from administrative duties but will remain in the department as professor of physiology. Dr. Park joined the faculty of the Washington University School of Medicine, St. Louis, in 1949 as Welch Fellow in Internal Medicine, instructor in medicine, and assistant physician to Barnes Hospital.——Dr. John William Hillman has been appointed assistant professor of surgery at Vanderbilt University School of Medicine. Dr. Hillman has been instructor in orthopedic surgery at the Johns Hopkins University School of Medicine, Baltimore, during the past year. ——Dr. Robert I. Carlson, Albuquerque, N. M., has been appointed associate professor of surgery, Vanderbilt University Medical School. Dr. Carlson joined the department of medicine and surgery of the Veterans Administration in July, 1947, and since December, 1947, has been serving as chief of the surgical service at the Veterans Administration Hospital in Albuquerque.

WISCONSIN

Hospital News.—Mr. Alvin Langehaug, formerly superintendent of Fairview Hospital, Minneapolis, will become administrator of the Milwaukee Hospital on July 15. Mr. Langehaug is president of the Lutheran Hospital Association of America.

Addition to Medical School.—Ground has been broken for the Marquette University Medical School's new $800,000 addition to its present building at 561 N. 15th St., Milwaukee. The first floor will house the new Carey Medical Library, named for the late dean of the school and his wife, Dr. and Mrs. Eben J. Carey. The addition will connect the medical school to the dental school and form a closed rectangle extending from North 15th Street to North 16th Street.

New Physical Therapy Course.—A physical therapy course will be offered for the first time this fall in the department of physical medicine and rehabilitation at Marquette University Medical School, Milwaukee. Dr. Ray G. Piaskowski, chief of physical medicine rehabilitation service at the Veteran's Hospital and head of the physical medicine department at Marquette, will be in charge of the program. The four year course will be limited to 20 students. The curriculum will include two years of preclinical study in the college of liberal arts and two years of actual clinical training through supervised internships in the medical school.

University News.—Assisted by the exchange program of the Department of State, Dr. Hjalti Thorarinsson and his wife, Dr. Alma Anna Thorarinsson of Iceland, have been offered simultaneous scholarships at the University of Wisconsin General Hospital in Madison. Hjalti Thorarinsson, a graduate of University of Iceland Medical School, Reykjavik, has been assistant surgeon at the State Hospital for the past two years. He will serve as a resident surgeon at the University of Wisconsin School of Medicine for about one year. His wife, also a graduate of the University of Iceland Medical School, will take her internship at the University of Wisconsin.

ALASKA

Clinics in Fairbanks.—Newly established eye, ear, nose, and throat clinics are to be held monthly in Fairbanks through the Health Department's Maternal and Child Health Division. Dr. Hugh B. Fate, Alaska Department of Health consultant in otolaryngology and ophthalmology in that city, will conduct the clinics, which are available for medically indigent children under 21 years of age. Orthopedic clinics are also being conducted once a month in Fairbanks by Dr. Paul B. Haggland, orthopedic consultant for the health department.

GENERAL

Medical Directors for Civil Defense.—The regional offices of the Federal Civil Defense Administration have been authorized to employ full-time medical directors to handle medical civil defense problems arising within regional defense areas. The salary for this position is $10,800 per year.

Fellowships Awarded.—Baxter Laboratories, Inc. of Morton Grove, Ill., recently awarded 10 fellowships for graduate work in the medical sciences. Two short-term fellowships were also given. The Baxter fellowship program was initiated in 1951 to encourage students to continue studies in advanced research. Nominations are received from medical schools throughout the nation.

Society Election.—At the annual meeting of the American Proctologic Society in Milwaukee, June 4-7, Dr. Newton D. Smith, Rochester, Minn., was elected president; Dr. W. Wendell Green, Toledo, Ohio, president-elect; Dr. Julius E. Linn, Birmingham, Ala., vice-president; Dr. Stuart T. Ross, Hempstead, N. Y., secretary; and Dr. Rufus C. Alley, Lexington, Ky., treasurer.

Discontinue Kodachrome Professional Film Processing.—The Eastman Kodak Company announces that it will not process Kodachrome Professional Sheet Film after July 31. Physicians having such film in their possession are advised to send it immediately to the Eastman Kodak Company, Rochester, N. Y. The company will continue to offer processing service for Kodachrome film in the no. 135 and no. 828 amateur film sizes for miniature cameras, and for 8 mm. and 16 mm. motion picture films.

Personal.—Dr. Jack N. Hunt, senior lecturer in physiology, Guy's Hospital Medical School, London, has come to the United States under a fellowship from the Rockefeller Foundation. He will continue his studies on the function of the digestive tract at the University of Tennessee College of Medicine, Memphis, working with the research group of Dr. John P. Quigley, chief of the division of physiology, and in New York will work in the gastroenterology research laboratory of Mt. Sinai Hospital under the direction of Franklin Hollander, Ph.D., head of the laboratory.

Awards for Cancer Research.—The American Cancer Society has awarded 48 fellowships in cancer research for 1952-1953. Two of these are British-American exchange fellowships. The total value of the awards is $196,649. Recipients of the awards will study in 30 institutions in the United States and in three foreign countries. The society has also awarded six scholar grants to help promising scientists who have recently completed training to establish themselves as cancer investigators. These grants provide $6,000 annually for a period of three years to the institution at which the scholar elects to carry on his research.

Medical Exhibitors Elect Officers.—Mr. A. Paul Burton, vice-president of W. B. Saunders Company of Philadelphia, has been elected president of the Medical Exhibitors Association. This organization, with a membership of over 200 of the leading technical exhibitors at A. M. A. meetings, acts as a liaison between the American Medical Association and other professional groups who hold annual meetings. Other new officers include: Mr. S. A. Montgomery, manager, professional relations, Gerber Products Company, vice-president; Mr. William W. Gallagher, MacGregor Instrument Company, treasurer; and Mr. Don M. Robertson, Sharp and Dohme, secretary.

American Surgeons Honored by French.—During the recent meeting of the International College of Surgeons at Bordeaux, France, seven American surgeons were honored by the French. M. André Marie, national minister of education, conferred honorary citizenship on Dr. Max Thorek of Chicago, founder and secretary-general of the college, and on Dr. Henry W. Meyerding, Rochester, Minn., president of the United States chapter of the college. Medals of honor were bestowed on Drs. William W. Babcock and Harry E. Bacon of Philadelphia; Edward L. Compere of Chicago; Arnold S. Jackson, Madison, Wis., secretary of the United States chapter; and Roland M. Klemme of St. Louis.

Pharmaceutical Awards.—Dr. Paul B. Dunbar, Ph.D., commissioner of the Federal Food and Drug Administration from 1944 to 1951, was recently given the special annual award of the American Pharmaceutical Manufacturers' Association for outstanding service in helping "to uphold the high standards of public health" in the United States.

René J. Dubos, Sc.D., recently received the 1952 annual Research Award of the American Pharmaceutical Manufacturers' Association for scientific contributions to the "welfare of mankind." These included research resulting in the discovery of tyrothricin and gramicidin. Dr. Dubos is currently president of the Society of American Bacteriologists.

International Fertility Association.—The International Fertility Association was recently founded in Rio de Janeiro, Brazil, to study the problems of fertility and sterility in their broad implications, to stimulate scientific investigation and social awareness in this field, to standardize and orient nomenclature, terminology, tests, and evaluation of diagnostic methods and therapy throughout the world, and to hold international congresses in the specialty. The first World Congress on Fertility and Sterility sponsored by the new society will be held in conjunction with the American Society for the Study of Sterility in New York in May, 1953. Information may be secured from Dr. Carlos D. Guerrero, Secretary-General, Miguel E. Schulz No. 19, Mexico, D. F., or from Dr. Abner I. Weisman, Associate Secretary-General, 1160 Fifth Ave., New York.

Prevention of Asphyxial Deaths.—The New York Eye and Ear Infirmary in cooperation with the Society for the Prevention of Asphyxial Death Inc., announces the continuation of its out-of-town courses in laryngoscopy and intubation for prevention and treatment of acute asphyxial accidents. Classes will meet in Atlantic City, July 11-12, and Baltimore Aug. 2-3. The New York City courses, which are given the first Friday and Saturday of the month, will be resumed Sept. 5-6. The matriculation fee is $50. Out-of-town courses require a preparatory period of two months for logistical development. Those interested in attending a stated course or in having a course presented in a certain city should communicate with the Secretary, SPAD, Inc., 2 East 63 St., New York 21.

Trip to South America.—Pierre Dorolle, deputy director general of the World Health Organization, and Dr. Fred L. Soper, director, Pan American Sanitary Bureau, WHO Regional Office, left June 21 for a six weeks' trip through South America to confer with ministers and directors of public health of the member governments and with field personnel, on public health programs assisted by the bureau. The itinerary includes Colombia, Ecuador, Peru, Brazil, Uruguay, Argentina, and Chile. The bureau's three zone offices in Lima, Rio de Janeiro, and Buenos Aires will be visited. Dr. Dorolle will address the Colombian Academy of Medicine in Bogota on the relation between curative and preventive medicine. There will also be an opportunity to attend a session of the third Nursing Workshop sponsored by PASB in Lima, July 30 through Aug. 10.

LATIN AMERICA

Yellow Fever in Costa Rica.—During the first half of June an outbreak of jungle yellow fever was reported in the Baru River zone in the southern jungle region of Costa Rica. Five cases were confirmed. For the period June 16-20, two deaths were reported.

FOREIGN

Aged Persons to Have Own Village.—Israel, which already has established a "village of the blind," will now have a "village of the aged." The community, which will house elderly persons without families, is to be built near Tel Aviv under the auspices of the Israel Ministry of Social Welfare.

Personal.—Dr. Theophile A. Alajouanine, professor of clinical neurology, University of Paris, France, received the doctor of science degree at the commencement of the University of Illinois Chicago Professional Colleges in Chicago, June 19. Dr. Alajouanine, who is the first to receive an honorary degree from the university's Chicago Professional Colleges since 1946, is the author of more than 400 publications on neurological diseases, including four books.

Meeting of Residents in Paris.—The American Hospital of Paris held a meeting of the Residents-Ex-Residents Association, May 2, in Paris. The following papers were presented:

John Converse, New York, Use of ACTH in Burns.
D. Briggs, Paris, Experience with Cortisone and ACTH.
Austin McCawley, Paris, Cirrhosis of the Liver and Peripheral Neuritis.
Maurice A. Hardgrove, Milwaukee, Liver Function Studies.
Christian P. Nezelof, Paris, Histopathology of Liver Diseases.
Giles S. Terry, Scarsdale, N. Y., The Changing Face of Medicine.
Franceis de Gaudar D'Allaines, Paris, Cardiac Surgery.

Dr. Laurence S. Fuller, Columbia, S. C., was elected president of the association, and Drs. J. R. Murphy and William Burke of New York were named treasurer and secretary, respectively.

World Congress of Jewish Physicians.—The Medical Association of Israel announces that the second World Congress of Jewish Physicians will convene in Israel Aug. 10-14. The first congress was held in Israel in 1936. Participants in the program on Wednesday include:

J. Rogoff, Cleveland, Adrenal Cortical Hormones.
Sidney W. Gross, New York, Diagnosis and Treatment of Brain Tumors.
B. Zondek, Jerusalem, Action and Inactivation Mechanism of the Estrogens.
Benjamin M. Gasul, Chicago, Fundamental Problems in Congenital Heart Diseases.
I. Berenblum, Rehovot, Israel, Modern Trends in Tumor Causation.
A. Baruk, Paris, Activity of ACTH in Cerebral Circulation.
Leo M. Taran, Long Island, N. Y., Rheumatic Fever in the Light of the Latest Research.

Information may be obtained from the Medical Association of Israel P. O. B. 1342, Jerusalem, Israel. Flight reservations may be made through the American Physicians Fellowship Committee of the Israel Medical Association, which has set up a special APFC Congress Fund by means of which round trip reservations may be procured for $790 per person. Transportation deposit of $100 should be mailed to APFC headquarters at 273 Main St., Nashua, N. H.

Physical Medicine Congress in London.—The International Congress of Physical Medicine will convene in London, England, July 14-18, under the presidency of the Right Hon. Lord Horder, G.C.V.O. The sessions will open Monday afternoon with a "Review of Physical Medicine in the Past Decade," in which Dr. Frank H. Krusen, Rochester, Minn., will participate. Tuesday morning will be devoted to a symposium on "Physical Education," with Lieut. Col. John H. Kuitert, U. S. Army, as one of the participants. On Wednesday morning Dr. Howard A. Rusk, New York, will collaborate in a symposium on "Rehabilitation and Resettlement." Thursday morning there will be a symposium on "The Management of the Chronic Rheumatic and Other Disorders of the Locomotor System," and on Friday one on "Electrodiagnostic Methods." Other representatives from the United States whose papers will be among the 52 presentations on the program include:

Robert L. Bennett, Warm Springs, Ga., Supportive and Assistive Apparatus in Convalescent Poliomyelitis.
Miland E. Knapp, Minneapolis, Results of Treatment of Acute Poliomyelitis at the Kenny Institute.
Alvin B. C. Knudson, Washington, D. C., Physical Medicine and Rehabilitation in the Veterans Administration.
Frederic J. Kottke, Minneapolis, Studies on Vasomotor Activity in the Feet Following Acute Anterior Poliomyelitis.
Edward W. Lowman, Rochester, Minn., Rehabilitation of the Chronic Rheumatoid Arthritis Derelict.
William D. Paul, Iowa City, Studies on Permeability of the Synovial Membrane.

CORRECTION

Dr. Harold Brandaleone.—The name of the medical director of the Third Avenue Transit System of New York City is Dr. Harold Brandaleone, not Dr. Frank Brandaleone, as stated in THE JOURNAL, June 14, p. 670.

MEETINGS

Alaska Territorial Medical Association, Anchorage, Aug. 21-23. Dr. William P. Blanton, P. O. Box 2569, Juneau, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, The Homestead, Hot Springs, Va., Sept. 4-6. Dr. William F. Mengert, 2211 Oak Lawn Ave., Dallas, Texas, Secretary.

American Congress of Physical Medicine, Roosevelt Hotel, New York, Aug. 25-29. Dr. Frances Baker, One Tilton Ave., San Mateo, Calif., Secretary.

American Physiological Socety, New Orleans, Sept. 4-6. Dr. E. F. Adolph, University of Rochester School of Medicine and Dentistry, Rochester, N. Y., Secretary.

National Medical Association, Chicago, Aug. 11-15. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

Nevada State Medical Association, Reno, Aug. 21-23. Dr. William A. O'Brien III, 505 Chestnut St., Reno, Secretary.

Post Graduate Medical Assembly of South Texas, Shamrock Hotel, Houston, July 21-23. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secretary.

Reno Surgical Society Conference, Reno, Nevada, Aug. 21-23. Dr. Olin C. Moulton, 130 N. Virginia St., Reno, Nevada, Chairman.

Rocky Mountain Radiological Society, Denver, Aug. 7-9. Dr. Maurice D. Frazer, 1037 Stuart Bldg., Lincoln, Neb., Secretary.

U. S. Chapter, International College of Surgeons, Conrad Hilton Hotel, Chicago, Sept. 2-5. Dr. Arnold S. Jackson, 1516 Lake Shore Drive, Chicago, Executive Secretary.

Utah State Medical Association, Salt Lake City, Sept. 4-6. Dr. T. C. Weggeland, 42 S. Fifth East St., Salt Lake City, Secretary.

West Virginia State Medical Association, The Greenbrier, White Sulphur Springs, July 24-26. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

INTERNATIONAL

American Congress of Industrial Medicine, Rio de Janeiro, Brazil, Sept. 20-28. General Secretarial Office: Calle Arenales No. 981 Buenos Aires, Argentina.

Australasian Medical Congress, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, General Secretary.

European Congress of Cardiology. University of London, Bloomsbury, W.C.1, England, Sept. 10-12. Dr. K. Shirley Smith, 35 Wimpole St., London, W.1, England, Secretary.

European Society of Cardiovascular Surgery, Strasbourg, France, Oct. 3-4. Sir James Learmonth, Department of Surgery, University New Buildings, Edinburgh 8, Scotland.

Interamerican Cardiological Congress, Buenos Aires, Argentina, Aug. 31-Sept. 7. Dr. Blas Moia, Larrea 1132, Buenos Aires, Argentina, Secretary-General.

Inter-American Congress of Public Health, Havana, Cuba. Sept. 27-Oct. 1. Pan-American Sanitary Bureau, 2001 Connecticut Ave., Washington, D. C

Inter-American Congress of Radiology, Mexico City, Mexico, Nov. 2-8. Dr. Guido Torres Martinez, Marsella No. 11, Mexico, D.F., Secretary-General.

International Congress of Biochemistry, Paris, France, July 21-27. Prof. Jean Courtois, 4, Avenue de l'Observatoire, Paris 6^e, France, Secretary.

International Congress of Dermatology and Syphilology, London, England, July 21-26. Dr. Gordon B. Mitchell-Heggs, 5, Lisle St., London, W.C.2, England, General Secretary.

International Congress on Diseases of the Chest, Rio de Janeiro, Brazil, Aug. 24-30. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

International Congress of Haematology, Mar del Plata, Argentina, Sept. 21-26. Dr. Carlos Reussi, Anchorena 1710, Buenos Aires, Argentina, Secretary.

International Congress of the History of Medicine, Nice-Cannes, France, and Monaco, Sept. 8-14. Dr. F. A. Sondervorst, 124 Avenue des Allies, Louvain, Belgium, Secretary-General.

International Congress on Hydatid Disease, Santiago, Chile, Nov. 21-24. Organizing Committee, P. O. Box 9183, Santiago, Chile.

International Congress of Internal Medicine, Friends House, London, N.W.1, Eng. Sept. 15-18. Sir Harold Boldero, 12 Pall Mall East, London, S.W.1, England, Secretary.

International Congress on Medical Records, London, England, Sept. 7-12. Miss Gwen Perkins, 120 C Street S.E., Washington, D. C., Chairman.

International Congress of Military Medicine and Pharmacy, Montevideo, Uruguay, March 1-7. Dirreccion General del Servico de Sanitad Militar, 8 de Octubre y Mariano Moreno, Montevideo, Uruguay, Secretariat of the Congress.

International Congress on Neuropathology, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

International Congress of Otorhinolaryngology, Amsterdam, Netherlands, June 8-15. Dr. W. H. Struben, J. J. Viottastraat 1, Amsterdam, Netherlands, Secretary.

International Congress of Physical Medicine, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

International Congress of Urology, The Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 15-18. Dr. John A. Taylor, 2 East 54th St., New York, N. Y., U. S. A., Secretary-General.

International Hospital Congress, London, England, May 25-30. Capt. J. E. Stone, 10 Old Jewry, London, EC2, England, Hon. Secretary.

International Society of Geographic Pathology, Liège, Belgium, July 15-18. Dr. Fred C. Roulet, Habelstr. 24, Basel, Switzerland, Secretary General.

International Union Against Tuberculosis, Rio de Janeiro, Brazil, Aug. 24-27. Prof. Etienne Bernard, 66 Blvd. St. Michel, Paris 6e, France, Secretary-General.

Medical Women's International Association, Vichy, France, Sept. 12-16.

Neuroradiologic Symposium, Stockholm, Sweden, Sept. 17-20. Docent Ake Lindbom, Symposium Neuroradiologicum, Serafimerlasarettet, Stockholm K., Sweden, Secretary.

World Congress of Jewish Physicians, Jerusalem, Israel, Aug. 10-14. Secretariat: % Israel Medical Association, Rehov Mesilat Yesharim, Beth Kovatz, Jerusalem, Israel.

World Congress of Medicine, Montecatini, Italy, Oct. 16-18. Secretariat: Corso Trieste, 65, Rome, Italy.

World Federation of Mental Health, Brussels, Belgium, Aug. 25-Sept. 1.

World Medical Association, Athens, Greece, Oct. 12-16. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary General

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Part I*, September. All centers where there are five or more candidates. Exec. Sec., Dr. John P. Hubbard, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* Swampscott, Mass., Sept. 28-Oct. 1. Sec., Dr. C. B. Hickcox, 80 Seymour St., Hartford 15.

American Board of Dermatology and Syphilology: *Written.* Various Centers, September 1953. Final date for filing applications was May 1. All candidates are now required to take the written examination. *Oral.* Philadelphia, October 1953. Ex. Sec., Miss Janet Newkirk, 66 East 66th St., New York 21.

American Board of Internal Medicine: *Written.* Various centers and overseas, Oct. 20. Closing date for the acceptance of applications for the written examination was May 1. *Oral.* San Francisco, Sept. 3-6; Philadelphia, Nov. 13-14 and Washington, D. C., Nov. 17-18. Exec. Sec.-Treas., Dr. William A. Werrell, 1 West Main Street, Madison 3.

American Board of Obstetrics and Gynecology: *Written.* Various Centers, Feb. 6, 1953. Final date for filing applications is Nov. 1. Sec., Dr. R. L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Written.* Various Centers, January 1953. Final date for filing applications was July 1. *Practical.* Chicago, Oct. 6-10 and New York City, June 6-10, 1953. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

American Board of Orthopaedic Surgery: The deadline for the receipt of applications for the 1953 Part II examinations is Aug. 15. Sec., Dr. Harold A. Sofield, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: *Written.* Chicago, Oct. 6-10. *Oral.* Chicago, Oct. 6-10 and April 21-25, 1953. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

American Board of Pathology: *Written and Oral.* Pathologic Anatomy and Clinical Pathology examination. Chicago, Oct. 9-11. Sec., Dr. William B. Wartman, 303 E. Chicago Ave., Chicago 11.

American Board of Pediatrics: *Oral.* Chicago, Oct. 24-26; Boston, late November. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Preventive Medicine and Public Health: Cleveland, Oct. 18-20. Sec., Dr. E. L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Proctology: *Oral and Written.* Philadelphia, Sept. 27-28. Sec., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Psychiatry and Neurology: New York City, Dec. 15-16. Final date for filing applications is Sept. 15. Sec.-Treas , Dr. David A. Boyd, Jr., 102-110 Second Ave. S.W., Rochester, Minn.

American Board of Radiology: *Oral.* Dec. 1-7. Final date for filing application was June 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

American Board of Surgery: *Written.* Various Centers. October 1952. Final date for filing application is July 1. Sec., Dr. J. Stewart Rodman, 225 15th St., Philadelphia.

Board of Thoracic Surgery: *Written.* Various Centers, Sept. 5. Sec., Dr. William M. Tuttle, 1151 Taylor Ave , Detroit 2.

DEATHS

Seeger, Stanley Joseph ⊕ Dallas, Texas. Chairman of the Council on Industrial Health of the American Medical Association from the time of its organization in 1937 until 1947, died in New York, June 20, aged 62. Dr. Seeger was born at Manitowoc, Wis., June 21, 1889. He received his M.D. degree from Northwestern University Medical School in Chicago in 1911 and became an intern at Michael Reese Hospital, serving until 1913. On April 21, 1915, he entered the Mayo Foundation, University of Minnesota in Rochester, as a fellow in surgery and left on April 1, 1917 from which time until 1941 he was engaged in the practice of surgery in Milwaukee. He served on the faculty of Marquette University School of Medicine, and from 1934 to 1941 was chief-of-staff of Milwaukee Children's Hospital, where in 1944 the amphitheater was named in his honor. He was also chief-of-staff of Columbia Hospital from 1938 to 1941 and was attending surgeon at the Evangelical Deaconess and Johnston Emergency hospitals. Dr. Seeger was Vice-President of the American Medical Association in 1944-1945. He was a president of the State Medical Society of Wisconsin, the Milwaukee County Medical Society, and the Alumni Association of the Mayo Foundation; also a member of the founders group of the American Board of Surgery, a member of the Western Surgical Association, Wisconsin Clinical Surgical Club, Milwaukee Academy of Medicine, American Association for the Surgery of Trauma, Milwaukee Surgical Society, and the Industrial Medical Association, and a fellow of the American College of Surgeons. In 1936 he received the master of science degree in anatomy from Marquette University. From August, 1918, to February, 1919, Dr. Seeger served in the medical corps of the U. S. Army, first at Fort Oglethorpe, Ga., then at Camp Custer, Mich., and at the Detroit General Hospital.

In 1937 the Northwestern University Alumni Association presented him with an award of merit "in recognition of achievement which reflected credit on Northwestern University and her alumni." He was a consultant to the division of industrial hygiene of the National Institute of Health, and president of the William Buchanan Foundation in Texarkana, Texas. Dr. Seeger had done research on the treatment of burns, congenital arteriovenous anastomoses, transfusion, and pediatric surgery. He contributed many papers to medical literature on clinical subjects and other papers relating to medical education, industrial health, and the social aspects of medicine. He was president and director of a number of oil companies and director of the Texarkana National Bank and the First National Bank of Dallas.

Symmers, Douglas, New York; born in Columbia, S. C., Sept. 17, 1879; Jefferson Medical College of Philadelphia, 1901; professor emeritus of pathology at New York University College of Medicine; instructor in pathology in 1907 and professor from 1911 to 1918, Bellevue Hospital Medical College; instructor in pathology at Cornell University Medical College from 1908 to 1911 and later assistant professor of pathologic anatomy; member of the American Association of Pathologists and Bacteriologists and the International Association of Medical Museums; fellow of the New York Academy of Medicine; past president of the New York Pathological Society; director, division of laboratories, department of hospitals, New York City; assistant pathologist, New York Hospital from 1908 to 1913; consulting pathologist for Englewood (N. J.) Hospital, Beekman Downtown Hospital and the University Hospital; editor of Ziegler's "General Pathology," fifth American edition, in 1921; died in Bellevue Hospital April 19, aged 72, of arteriosclerosis and mesenteric embolism.

Quackenbos, Harrie Maxwell, Colony, Va.; born in Hartford, Conn., April 12, 1888; Jefferson Medical College of Philadelphia, 1914; L.R.C.P., London and M.R.C.S., England, 1916; member of the American Psychiatric Association; formerly house surgeon and clinical assistant at the Hospital for Sick Children in London, senior resident officer and superintendent of the Taunton and Somerset Hospital in Taunton, England, and senior resident officer at Queen Mary's Hospital in London; at one time medical officer of health, Woodgreen, Urban District Council, London; served as assistant attending physician at the Broad Street Hospital in New York, and as senior resident physician at the New Jersey State Hospital in Trenton, N. J.; since 1949 clinical director of the Lynchburg State Colony; died March 31, aged 63, of primary carcinoma of the lung.

Carter, Rupert Franklin ⊕ New York; born in Holly Springs, N. C., May 18, 1894; Columbia University College of Physicians and Surgeons, New York, 1918; professor of clinical surgery at the Post-Graduate Medical School of the New York University-Bellevue Medical Center; member of the founders group of the American Board of Surgery; member of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons; fellow of the American College of Surgeons; in 1921 organized the medical department of *New York Times,* and for many years served as its director; co-author of "Diagnosis and Management of Diseases of the Biliary Tract"; attending surgeon, University Hospital and St. Clare's Hospital; visiting surgeon, fourth surgical division, Bellevue and Gouverneur hospitals; chairman of the medical board, Leroy Hospital, where he died April 19, aged 57, of bronchopneumonia.

Church, Archibald ⊕ Pasadena, Calif.; born in Fond du Lac, Wis., March 23, 1861; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1884; an Associate Fellow of the American Medical Association and chairman of its Section on Nervous and Mental Diseases, 1918-1919; past president of the Chicago Medical Society; member of the Illinois State Medical Society and the American Psychiatric Association; formerly practiced in Chicago, where he was professor of nervous and mental diseases in the Northwestern University Medical School, where a medical library was named in his honor; formerly affiliated with St. Luke's, Mercy, Michael Reese, and Wesley Memorial hospitals in Chicago; joint author with Dr. Peterson of a text book on "Nervous and Mental Diseases"; died May 8, aged 91, of diverticulitis.

Bradley, James Albert ⊕ St. Petersburg, Fla.; University of Pennsylvania School of Medicine, Philadelphia, 1927; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; formerly on the faculty of the University of Texas School of Medicine in Galveston, and the Louisiana State University Medical Center in New Orleans; served during World War II; consultant in cardiology, Veterans Administration Center in Bay Pines; member of staff, Mound Park Hospital; on the associate staff, St. Anthony's Hospital; died aboard ship in the Caribbean April 16, aged 52.

Case, Eugene Allen ⊕ Lansdowne, Pa.; born in New Albany, Ind., Nov. 14, 1877; Medico-Chirurgical College of Philadelphia, 1908; emeritus professor of morbid anatomy, the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; specialist certified by the American Board of Pathology; member of the American Association of Pathologists and Bacteriologists and the College of American Pathologists; fellow of the American College of Physicians; affiliated with Delaware County Hospital in Drexel Hill, where he died April 20, aged 74.

Armen, Kachig Hovanes ⊕ Columbus, Ohio; Starling-Ohio Medical College, Columbus, 1909; affiliated with Mercy Hospital, St. Francis Hospital and Grant Hospital, where he died April 14, aged 70, of coronary thrombosis.

Bader, George Bernard, Washington Depot, Conn.; Columbia University College of Physicians and Surgeons, New York, 1920; specialist certified by the American Board of Pediatrics; served during World War II; for many years on the faculty of his alma mater; formerly on the staff of Babies Hospital in New York; died in St. Luke's Hospital, New York, April 18, aged 56, of coronary disease.

⊕ Indicates Member of the American Medical Association.

Bier, Joseph, New York; Long Island College Hospital, Brooklyn, 1907; died recently, aged 66, of coronary occlusion.

Blew, Edgar Maule, Upper Darby, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1914; served during World War I; psychiatric examiner at Allentown Induction Center during World War II; instructor in psychiatry at his alma mater; for many years on the staff of the Allentown (Pa.) State Hospital; on the consulting staff of Sacred Heart Hospital in Allentown, where he died April 3, aged 70, of cerebral hemorrhage.

Blumen, David ⊕ Brooklyn; New York University College of Medicine, New York, 1937; also a graduate in dentistry; died recently, aged 48, of coronary thrombosis.

Bock, Charles Aloysius, Wexford, Pa.; University of Maryland School of Medicine, Baltimore, 1935; died in Presbyterian Hospital, Pittsburgh, recently, aged 46, of lymphosarcoma.

Butler, Thomas Bentley ⊕ San Antonio, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1929; member of the American Academy of General Practice and the American Medical Association; served during World War II; affiliated with Santa Rosa, Nix Memorial, and Baptist Memorial hospitals; died March 24, aged 49, of a heart attack.

Clark, Wilbert B. ⊕ Kenmore, N. Y.; Michigan College of Medicine and Surgery, Detroit, 1894; member of the American Medical Association and the Michigan State Medical Society; died March 30, aged 83, of acute myocardial infarction and coronary thrombosis.

Clement, Thomas Gage ⊕ Healdsburg, Calif.; University of Colorado School of Medicine, Denver, 1910; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, Radiological Society of North America and the American College of Radiology; served during World wars I and II; affiliated with Healdsburg General Hospital; formerly on the staffs of St. Charles Hospital in Aurora, Ill., and St. Luke's Hospital in Duluth, Minn.; died March 26, aged 65, of coronary occlusion.

Cowie, Charles Stuart, Arlington, Va.; Columbian University Medical Department, Washington, D. C., 1891; died recently, aged 85, of coronary thrombosis.

Howard, Abner Perry, Vernon, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1903; formerly city health officer; died recently, aged 81, of cancer of the stomach.

Irwin, Clyde Moran, Charlotte, Texas; University of Louisville (Ky.) Medical Department, 1909; died in Poteet recently, aged 68, of acute coronary occlusion.

Jandrain, Richard Raymond, Green Bay, Wis.; Marquette University School of Medicine, Milwaukee, 1930; died recently, aged 55, of coronary thrombosis.

Khorozian, Krikor G., ⊕ Pineville, W. Va.; State University of Iowa College of Medicine, Iowa City, 1920; interned at Elkins (W. Va.) Hospital; served with the Chemical Warfare Division of the U. S. Army during World War I; author of "Microkaryocytes, the Fourth Corpuscles, and Their Functions"; nominated for honorary membership in the International Mark Twain Society; died March 22, aged 64, following a heart attack.

Kimura, Robert Akio ⊕ Honolulu, Hawaii; St. Louis University School of Medicine, 1927; president of the Kuakini Hospital medical staff; died recently, aged 52, of carcinoma of the liver.

McLaughlin, Harry James, Bloomington, Wis.; St. Louis College of Physicians and Surgeons, 1908; died in Lancaster March 19, aged 75, of carcinoma of the bladder.

Maurer, Robert Noren, Harrington Park, N. J.; Yale University School of Medicine, New Haven, 1948; died recently, aged 27.

Maytum, Wellington James, Alexandria, S. D.; State University of Iowa College of Medicine, Iowa City, 1891; served during World War I; superintendent of schools, 1893-1894; formerly state senator; died in Veterans Administration Hospital, Fort Meade, March 24, aged 87, of hemorrhage and gastric ulcer.

Petersen, Alfred ⊕ Brooklyn; Hamburgische Universität Medizinische Fakultät, Hamburg, Germany, 1920; died recently, aged 57.

Pettigrew, Richard R., Cleveland; Long Island College Hospital, Brooklyn, 1898; Harvard Medical School, Boston, 1900; died recently, aged 80.

Rabe, Rudolph Frederick, Madison, N. J.; New York Homeopathic Medical College and Hospital, New York, 1896; formerly on the faculty of his alma mater; died March 18, aged 80, of virus pneumonia.

Ray, Samuel Philip, Leaksville, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1929; past president of the Rockingham County Medical Society; died March 28, aged 49, of coronary thrombosis.

Redmond, Maurice Snowden, Pittsburgh; University of Pittsburgh School of Medicine, 1913; served during World War I; affiliated with Roselia Foundling and Maternity Hospital and St. Francis Hospital; died April 16, aged 63, of acute coronary occlusion.

Reynolds, Marion Stuckey, Alhambra, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1891; formerly practiced in Columbus, Ohio, where she was superintendent of the Children's Hospital and affiliated with Columbus State Hospital; died April 13, aged 82.

Ridenour, David C. ⊕ Peru, Ind.; Starling Medical College, Columbus, 1892; member of the American Medical Association; served as secretary of the board of health, and as coroner; affiliated with Miami County Hospital; died at Rochester (Ind.) Nursing Home April 25, aged 83, of cardiovascular renal disease.

Riggle, Oliver ⊕ Lodi, Calif.; University of Michigan Homeopathic Medical School, Ann Arbor, 1919; died April 19, aged 58, of cerebral hemorrhage and arteriosclerosis.

Roche, Thomas Joseph ⊕ Bridgeport, Conn.; College of Physicians and Surgeons, Baltimore, 1911; also a graduate in pharmacy; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with Bridgeport Hospital; died April 30, aged 68, of hypertensive arteriosclerosis.

Rose, Alwyn F., North Andover, Mass.; Harvard Medical School, Boston, 1899; also a graduate in pharmacy; died April 3, aged 82, of cerebral hemorrhage.

Ruark, Rudy Elois, Henderson, Ky.; University of Tennessee College of Medicine, Memphis, 1942; served during World War II; company physician for the DuPont Plant in Chattanooga, Tenn.; died March 4, aged 34.

Sanders, John Summerfield ⊕ Leland, Miss.; Memphis (Tenn.) Hospital Medical College, 1900; member of the American Medical Association; at one time vice-president of the Mississippi State Medical Association; formerly practiced in Coffeeville, where he had been county health officer and president of Yalobusha County Medical Society; died April 9, aged 74.

Saxon, Leo ⊕ Chicago; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, Germany, 1921; member of the American Medical Association; affiliated with American Hospital and Alexian Brothers Hospital, where he died April 29, aged 59, of coronary disease.

Snedden, Alexander Ross ⊕ McKeesport, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1904; specialist certified by the American Board of Radiology; member of the American Medical Association, Radiological Society of North America, and the American College of Radiology; affiliated with McKeesport Hospital; died March 31, aged 72, of heart disease.

Sutherland, William Sassaman ⊕ Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1923; clinical professor of ophthalmology at his alma mater; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; on the staff of Hahnemann Hospital, where he died March 14, aged 55, of acute myocardial infarction and diabetes mellitus.

GOVERNMENT SERVICES

DEPARTMENT OF DEFENSE

Inspection of Research Facilities.—The Committee on Medical Sciences of the Department of Defense Research and Development Board made a seven day tour by airplane of military medical research facilities beginning June 23. The objective was to gather information on the location, physical structure, organization, command, special equipment, and personnel of each of the following facilities: Medical Nutrition Laboratory, Chicago; Naval Research Unit 4, Great Lakes, Ill.; Aero Medical Laboratory, Dayton, Ohio; Medical Department Field Research Laboratory, Fort Knox, Ky.; Naval School of Aviation Medicine, Pensacola, Fla.; and the Orlando Laboratory, Bureau of Entomology, Department of Agriculture, Orlando, Fla.

Committee members who made the trip were the chairman, Dr. Lowell T. Coggeshall, University of Chicago; Dr. Franklin C. McLean, University of Chicago; Dr. Frank B. Berry, Columbia University, New York; Dr. Wallace O. Fenn, University of Rochester, New York; Dr. William S. McCann, Strong Memorial Hospital, Rochester, New York; and Dr. Douglas D. Bond, Western Reserve University, Cleveland. Committee members from the military departments and several members of the staff of the committee also made the trip.

Personal.—Dr. F. Lloyd Mussells has been appointed executive director of the Committee on Medical Sciences, Research and Development Board, Department of Defense, succeeding Dr. Thomas B. Spencer who has joined the Cornell Medical Center in New York City as director of the outpatient department of the New York Hospital and as instructor in medicine at the College of Medicine, Cornell University. Dr. Mussells is on a two year leave of absence from Strong Memorial Hospital, University of Rochester, New York.

NAVY

Course in Special Weapons and Radioactive Isotopes.—A six day course in medical aspects of special weapons and radioactive isotopes will convene on Aug. 4 at the Naval Medical School, Bethesda, Md. Primarily conducted for the benefit of inactive reserve medical department officers, a limited number of medical department officers on active duty may be given "authorization orders" at no expense to the government to attend.

Inactive reserve medical, dental, medical service corps, and nurse corps officers residing in the 1st, 3rd, 4th, 5th, 6th, 8th, 9th Naval Districts and Potomac River Naval Command who desire to attend this course should submit request for the training to the commandant of their respective naval district at the earliest practicable date. Officers of the medical department on active duty must submit their requests for this course of instruction in accordance with current directives for temporary additional duty orders.

AIR FORCE

Class in Flight Medicine Graduates.—Nineteen student officers graduated from a new and expanded course in the basic elements of flight medicine June 28 at the School of Aviation Medicine, Randolph Field, Texas. The class, which matriculated last October, is the first to be graduated in the basic course since the outbreak of the war in Korea. While some of the graduates have been assigned to duty overseas, nine of them have been selected for a second year of clinical work in residency at the School of Public Health and Hygiene of Johns Hopkins University in Baltimore. This additional year in a civilian medical college is one of the important features of the new training program for flight surgeons. The officers chosen have devoted themselves to aviation medicine as a career. They have agreed to serve a total of at least five years in the Air Force. With further study and research, they will have an opportunity to qualify as specialists in this branch of medicine.

Personals.—Col. Nuel Pazdral has arrived at headquarters, Crew Training Air Force, Randolph Field, Texas, to assume his duties as air surgeon of the new command. His previous assignment was at Elmendorf Air Force Base, Alaska.——Dr. Michael Coss, professor of otolaryngology at the University of Iowa and consultant to the Surgeon General of the Air Force, has been on a world-wide tour of Air Force hospitals. He recently lectured at the 67th U. S. Air Force Hospital on definitive treatment and facial surgery before Air Force physicians serving in all parts of Korea.

PUBLIC HEALTH SERVICE

Hygiene of Aging Program.—A hygiene of aging program is being established in the Public Health Service, Surgeon General Leonard A. Scheele announces. The program will be operated by the division of chronic disease and tuberculosis of the Bureau of State Services. Dr. Cletus L. Krag, former research assistant of the division of gerontology, Washington University School of Medicine, will direct the program.

Dr. Scheele said, "The increase in our population of those past 65 years of age—three million in 1900 compared with around 13 million today—will mean that more health services will be needed for older persons. Increased emphasis will have to be placed on preventing and alleviating the ills of older adults and on helping them play a more active role in the community. Health agencies can do a great deal toward making the later years happier and more productive. Many health departments are beginning to recognize this responsibility by offering health guidance for older people." The purpose of the hygiene of aging program, the Surgeon General indicated, is to advise health departments on the development of these activities. The program is also designed to help health departments consider the needs and problems of the aging group in all their programs.

Health Conditions in Uranium Mines.—A study of occupational health conditions in the uranium industry, conducted by the Public Health Service and the Colorado State Department of Public Health with the full cooperation of the industry, has been under way since 1950. Physical examinations of over 1,100 workers in uranium mines and mills in Colorado, Utah, New Mexico, and Arizona have revealed no evidence of health damage from radioactivity, according to an interim report to the industry released by the Public Health Service. Dr. Seward E. Miller, Chief, Public Health Service Division of Occupational Health, who is in charge of the study, pointed out that these are interim findings and that the study is expected to continue for several years. The miners and millers will be reexamined periodically, and continued checks will be made of the working environment.

Commenting on the report, the Surgeon General, said, "In the course of this study, several potential health hazards were discovered by Public Health Service investigators, and recommendations for their elimination have been made to the operators of the uranium mines and mills. Many of these measures have already been instituted by the industry." Cooperating with the Public Health Service and the Colorado State Department of Public Health in this study are the Atomic Energy Commission, the U. S. Bureau of Mines, the Los Alamos Scientific Laboratory, the Navy Radiological Defense Laboratory, the U. S. Bureau of Standards, and the state health departments of Utah, New Mexico, and Arizona.

Reports on Water Pollution in Drainage Basin Areas.—The available facts regarding pollution in 226 United States river basins have been published in a series of 15 cooperative state-federal reports. A summary of the data in these area reports, "Water Pollution in the United States," has been issued to give the pollution picture for the nation as a whole. The drainage basin reports provide, for the first time, the names of the cities and industries that are creating pollution and thus are responsible for its abatement. The reports are being made available, principally through the official state water pollution control agencies, to the people in the local communities who are the ones who must take the steps necessary for the solution of their own problems.

Persons interested in developing community action programs for local abatement projects may obtain copies of the national report and the drainage basin report for their particular area through their state water pollution control agency or the Division of Water Pollution Control, U. S. Public Health Service, Washington, D. C.

A list of the reports in the water pollution series follows:

Number Title

1—Water Pollution in the United States
2—Tennessee River Drainage Basin
3—Missouri River Drainage Basin
4—Great Basin Drainage Basins
5—California Drainage Basins
6—Pacific Northwest Drainage Basins
7—New England Drainage Basins
8—Western Gulf Drainage Basin
9—Colorado River Drainage Basin
10—North Atlantic Drainage Basins
11—Lake Erie Drainage Basin
12—Ohio River Drainage Basin
13—Southeast Drainage Basins
14—Western Great Lakes Drainage Basin
15—Upper Mississippi Drainage Basin
16—Southwest-Lower Mississippi Drainage Basin

Toxoplasmosis.—A recent report on toxoplasmosis, comprising 105 pages and 91 illustrations, published by the U. S. Public Health Service, presents clinical histories of five infants who died and two surviving infants with toxoplasmosis, along with autopsy findings in four of the fatal cases. The cases described were selected from a group observed during a three year period in hospitals associated with the University of California Medical School. The authors of "Toxoplasmosis" are Pacob K. Frenkel, M.D., National Institutes of Health, Public Health Service, and Saul Friedlander, M.D., Sacramento, Calif.

The authors state that an acute infection may produce symptomatic visceral and central nervous system lesions in fetuses, infants, and occasionally in children and adults. The infection may pass unnoticed in adults and probably in many children, whose resistance is relatively high. With the development of neutralizing antibodies, the visceral lesions subside and most organisms disappear. Sometimes Toxoplasma persist, giving rise to subacute and chronic infection, especially in the central nervous system and the eye. Toxoplasma cysts may remain also in the heart and skeletal muscle, resulting in a carrier state. It would be difficult to determine the actual incidence of clinical toxoplasmosis in this country, inasmuch as many cases undoubtedly go unrecognized and others are not recorded. However, it is likely that most adults in the United States become infected once in their lifetime. Symptoms of the infection are slight and unrecognized in most instances. Copies of "Toxoplasmosis" may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. The price is fifty cents.

Clearinghouse on Morbidity Statistics Projects.—A clearinghouse for collection of information on studies and surveys of morbidity has been established as an aid to public health workers and others interested in disease, injury, and impairment statistics. It is under the auspices of the Public Health Conference on Records and Statistics. The organization's membership is made up chiefly of representatives from state and large city health departments, voluntary health associations, and the Public Health Service.

The clearinghouse has two major objectives: (1) to provide a systematic method of telling workers in the public health and medical field where specific data on human morbidity may be secured; (2) to afford a means whereby those planning studies or surveys involving the measurement of illness, disease, injuries, or impairments can get in touch with others who have undertaken similar tasks. For a project to be included in the clearinghouse listings it must satisfy the following criteria: 1. It must be concerned with statistics of illness, disease, injuries, or impairments; 2. It must have a valid population base so that rates of incidence, prevalence, and so forth, may be stated for the whole of the population studied. Projects based entirely on data from the notifiable disease reporting system will be excluded because of the ready availability of such data. Inquiries may be directed to: Clearinghouse on Current Morbidity Statistics Projects, % Division of Public Health Methods, Public Health Service, Washington 25, D. C.

Appoint Chief of Clinical Research.—The Surgeon General has announced the appointment of Dr. Norman B. McCullough as chief of clinical research at the Microbiological Institute of the National Institutes of Health, Bethesda, Md. The newly established unit will conduct clinical investigations in infectious and tropical diseases at the clinical center, now under construction and scheduled to open in the spring of 1953.

Prior to his appointment, Dr. McCullough was in charge of brucellosis research at the Microbiological Institute. His work in brucellosis will continue. Dr. McCullough was born in Michigan. He received his B.S. degree in chemistry at Michigan State College in 1932 and his M.S. degree in bacteriology a year later. His Ph.D. in bacteriology was earned at the University of Chicago in 1937, and in 1944 he was awarded his M.D. by that institution. From 1946 to 1947, he was on active duty with the U. S. Army Medical Corps.

New Federal Research Grants.—The Public Health Service announces that during the first half of the current fiscal year 249 new research grants have been made to universities, hospitals, medical and dental schools, and other nonfederal research institutions to help support medical and scientific research activities. The grants were made by the Surgeon General through the National Cancer Institute, the National Heart Institute, the National Institute of Arthritis and Metabolic Diseases, the National Institute of Dental Research, the National Institute of Mental Health, the National Institute of Neurological Diseases and Blindness, the National Microbiological Institute and the Division of Research Grants of the National Institutes of Health.

The awards were made on the recommendation of the seven national advisory councils, established by the Congress, to advise the Public Health Service in the field of research grants. The councils consist of medical authorities and representatives of the public. In addition to the new research projects, totaling $2,188,699, a total of 228 renewal grants were for the continuation of scientific studies currently under way.

Fly, Mosquito, and Rodent Control.—The Communicable Disease Center of the Public Health Service has issued manuals on fly, mosquito, and rodent control during emergencies. Although the manuals were designed for peacetime public health use, the Civil Defense Administration says they are "equally applicable to civil defense disaster relief operations." State and local health departments may get copies of the manuals from regional offices of the Public Health Service. State and local civil defense agencies may get them by writing to the Officer in Charge, Communicable Disease Center, U. S. Public Health Service, 50 Seventh St., N. E., Atlanta 5, Ga.

MISCELLANEOUS

Send Biochemists to International Congress.—Nineteen American biochemists have received travel grants from the National Science Foundation to attend the Second International Congress of Biochemistry in Paris, France, July 21 to July 27. Eight grants were awarded to young biochemists from a special list of 100 applicants, while the remaining 11 grants were awarded to senior biochemists selected on the basis of their contributions to research in biochemistry. In making the selections the foundation was guided by the recommendations of a special committee appointed by the American Society of Biological Chemists and endorsed by the Biological Chemistry Division of the American Chemical Society.

FOREIGN LETTERS

BRAZIL

Hypernephroid Tumor of the Ovary.—A case of primary tumor of the ovary, the structure of which was similar to the adrenal cortex, is reported by Drs. Carmen Escobar Pires, Altino Antunes, and Carlos Ribeiro Macedo. The designation of hypernephroid tumor is used by them because of its similarity to the adrenal cortex and because of its masculinizing effects, since the so-called hypernephroma or Grawitz's tumor does not have the same hormonal effects.

A 39-year-old woman had been treated for diabetes mellitus for two years and since then noticed growth of hair on her face and body, baldness (male alopecia), hoarseness of voice, and an abdominal tumor. These conditions became worse a year ago, and she was admitted to the hospital with acidosis, marked undernourishment, and glycosuria. She was operated on, and a bilateral ovarian tumor was found. Five months later, there was noted decrease of hair on the face and body, disappearance of baldness, but no improvement in diabetes mellitus. The patient neglected her health and died during a diabetic coma one and a half years after the operation, no recurrence of the tumor being found.

The main symptoms studied included defeminization and masculinization, high blood pressure, diabetes mellitus, and polycythemia. In this case two rare facts are pointed out, mainly the bilateral tumor and its association with uterine myoma, the last one accounting for irregular bleeding, and the marked masculinizing effects noticed although amenorrhea started only five months before the operation. Hormonal assays showed marked decrease of gonadotrophins and increase of estrogens and of 17-ketosteroids. Finally, the physicians state that it is not possible, so far, to determine the real origin of those tumors.

Female Urethral Diverticulum.—A number of articles have been published lately on the pathology of female urethra and particularly on female urethral diverticulum as discussed by Dr. Geraldo V. de Azevedo. He is of the opinion that to avoid confusion the term "urethrocele," used by many as synonymous with diverticulum, should not be encouraged, since some authors use it for other conditions. Classification of congenital diverticula in true diverticulum and pseudodiverticulum is quoted. Pathogenesis of acquired diverticula is minutely studied, and Dr. Geraldo V. de Azevedo favors dilation of urethral glands as the most important factor. A case of calculus in the interior of the diverticulum is reported. Symptoms are discussed as well as diagnosis, urethrography being favored by him as the only method for a correct diagnosis. Conservative and surgical treatments are taken up by Dr. Geraldo who uses a special cannula for urethrovesical instillations. Whenever possible surgery should be indicated, diverticulectomy being the method of choice. Stoeckel and other authors advise the shelling out of the diverticulum instead of the excision. He reports a series of 10 cases, illustrated with urethrograms. In six cases diverticulectomy was carried out, in one a calculus was removed from the diverticulum, and in three only local conservative treatment was used.

Metastasis of Hypernephroma to the Thyroid Gland.—In a review of the literature, Drs. Nicolau Morais Barros Filho and Alvaro Dino de Almeida found 23 cases of metastasis of hypernephroma of the thyroid gland. To this series a personal case is added, which is herewith presented in detail. A woman, aged 58, had a small, old, nodular goiter, which three months before admission had rapidly increased in size, invading the adjacent structures and producing progressive symptoms of compression of the esophagus and of the trachea. Besides the cervical tumor, which was formed by the enlarged thyroid gland, physical examination showed an abnormal resistance on the right upper quadrant of the abdomen, which was erroneously attributed to the enlarged liver. There were no complaints related to the urinary apparatus. With a clinical diagnosis of malignant tumor originating in the thyroid gland, palliative surgical removal was indicated with the purpose of alleviating the patient of the symptoms due to local compression.

At operation, the tumoral mass that had originated on the right lobe of the thyroid was removed together with all the invaded structures adjacent to it (prethyroid and sternomastoid muscles, a segment of skin, the internal jugular vein, and lymph nodes). The right carotid artery, involved by the tumor, had to be dissected in its entire length and at the end of the operation was found to have had its walls weakened and thinned as a consequence of neoplastic invasion. A complementary tracheostomy was performed. Postoperative course was uneventful for four days, during which the patient was completely relieved of all of her symptoms, but on the fifth day a sudden hemorrhage occurred owing to rupture of the carotid artery, producing the patient's death in a few seconds. At autopsy, a hypernephroma of the right kidney was found with metastasis in the thyroid (surgical specimen), in the right lung, and in lymph nodes (periaortic, left supraclavicular, and on both sides of the neck).

The authors call attention to the difficulties involving the diagnosis, and they stress the importance of always having in mind the possibility that a malignant tumor of the thyroid gland might not be primary but metastatic. Regarding treatment, which is necessarily surgical, it is usually indicated only for palliation.

New Radiological Sign in Cholecystography.—Dr. José Vitor Rosa presented a new radiological sign to be observed during cholecystography with the patient standing up. Owing to the closing of the Oddi's sphincter, the increased pressure in the common duct plus the secretory pressure result in the refilling of the gallbladder. The picture thus obtained shows the bile in the gallbladder separated in two layers: one is opaque from the dye, dense, located in the lower part of the gallbladder; the other layer is almost entirely free of dye, it appears to be overlying the first layer, and a level line is seen between the two layers. Dr. José Vitor Rosa called this the "closed Oddi's sign." He believed that the early appearance of this sign during the test with Boyden meal is significant of hypertonicity of Oddi's sphincter.

ITALY

Ferrara Academy of Sciences.—At a meeting of the Ferrara Academy of Sciences Dr. Rietti reported on untoward effects of intravenous administration and excess dosage of thiamine (vitamin B_1) and cited as an example the case of a patient who died after receiving 10 mg. of thiamine intravenously.

According to the speaker, it is possible that death may occur in certain ways in patients who receive small doses of thiamine and in other ways in those who receive doses of from 50 to 100 mg. intravenously. In the former, death may be due to anaphylactic shock; in the latter, it may be due to toxic accidents secondary to an increased breaking down of pyruvate in the liver and other tissues and a disturbed Krebs' cycle of the citric acid. Massive doses of thiamine, in addition to being dangerous, can be useless, because they are rapidly eliminated through the kidneys. Often it is not a question of the dosage but of the necessity to check endogenous disturbances that oppose the phosphorylation of thiamine, such as scarcity of phosphoric acid, adrenocortical insufficiency, or other disturbances.

Dr. Rietti did not wish to discourage or confine the therapeutic use of thiamine because sometimes there are subclinical and asymptomatic deficiencies of this vitamin. But in most cases oral administration of moderate doses is sufficient. If parenteral administration is performed, thiamine should be injected into the muscles slowly, letting the patient rest afterward for about one hour. Intravenous injection of massive doses of thiamine is indicated only in fulminant cardiac cases of beriberi.

The items in these letters are contributed by regular correspondents in the various foreign countries.

Drs. Tria and Barnabei studied a factor present in the liver that activates alcoholic fermentation. Autolysed liver extracts were prepared, which increased fermentation as much as seven or eight times, as measured by carbon dioxide production under certain conditions. The factor is dialyzable, resistant to acid or alkaline hydrolysis even at 120 C, is not inactivated by nitrous acid, and can be absorbed by animal carbon. The mechanism of action of this element consists mainly in speeding up the development of Saccharomyces organisms.

Drs. Ortolani and Nonato reported three typical cases of Bonnevie-Ullrich syndrome that occurred in two girls and a 4-year-old boy who had bilateral pterygium colli associated with the various typical anomalies of this syndrome. All the patients showed inadequate body development, and roentgenograms revealed skeleton alterations in two of them.

Dr. Ortolani described a fetus with two heads, two complete laterally united thoraxes each with two arms, and a single abdomen. The viscera, partly protruding like hernias into the thoracic cavity through a single incomplete diaphragm, were a single liver, a single spleen, and a single pancreas, whereas the gastrointestinal tract was double as far as the ileum and became single in the last 15 cm., continuing thus in the cecum, the appendix, and the colon, and ending in an ampulla of the rectum with atresic anal orifice. One urinary apparatus was entirely developed, whereas the other had two rudimentary kidneys partially fused in the middle. The same was true of the genital apparatus with the external genitals of a man. Multiple deformities were present in both hearts. The monster lived for 17 hours after birth.

Drs. Muratori and Nanetti reported on the studies they made by injecting diluted India ink in the blood flow in the marrow of the long bones of a guinea pig, a mouse, and a child. They observed that venous capillaries and sinusoids, largely anastomosed, prevail among the blood vessels of the bone marrow, and the ends of a few thin arteries open into these. The ends of the arteries have the structures of blood capillaries, and therefore the presence of true and real arteriovenous anastomoses is excluded. The blood vessels that run in the haversian canals of the compact shaft of the bone anastomose with a venous plexus under the endosteum that, in turn, is in direct relation with the venous vessels of the marrow.

Dr. Remelli studied changes in striated muscle fibers in arthritis following large and prolonged doses of desoxycorticosterone. Histological investigations of the muscle revealed hyaline degeneration in some fibers and initial waxy metamorphosis with accumulation of sarcoblasts in the sarcolemma. All the specimens showed a pronounced nuclear proliferation that seemed accentuated by a moderate reaction of the connective tissue, which was pronounced in the perivascular position.

Surgery of Sympathetic Nervous System in Vascular Disease of Brain.—At the 14th Convention of the International Society of Surgery in Paris, Professor Chiasserini, chief surgeon of the hospitals of Rome, pointed out that insufficient vascularization aggravated by vasospasm is one of the main factors in cerebral diseases. Operations on the sympathetic system are directed toward preventing or eliminating vasospasm, thus improving circulation in the brain. The exceptions are a few attempts to treat some spastic paralyses of cerebral or spinal origin by means of cervical or lumbar sympathectomies. Professor Chiasserini performed some sympathectomies in patients with spastic paraplegia of spinal origin, but his results were rather poor.

Blocking of the cervical sympathetic nerve and irrigation of the superior cervical ganglion with procaine hydrochloride before performing a cerebral angiography are well-known operations on the sympathetic nervous system aiming to prevent cerebral vasospasm. The speaker observed only 2 cases of transitory hemiparesis in about 300 arteriographies that he performed, almost always percutaneously, in his department.

The frequent, severe, and often fatal accidents secondary to ligation of a carotid artery for intracranial aneurysm are generally attributed to thrombosis, embolism, or softening of the ischemic area; but it is more probable that the ischemia is aggravated by a contemporaneous vasospasm. The number and severity of these complications appear to have decreased since blocking of the cervical sympathetic ganglion and ligation of the carotid artery "in phases" have been introduced.

As a rule, Professor Chiasserini performs section of the internal carotid artery gradually and successively following this procedure: (1) stenosis of the common carotid artery, by means of a streak of fascia or muscle; (2) double ligature of the internal carotid artery; and (3) section of the internal carotid artery. At each step, occurring at intervals of one and two days, respectively, procaine hydrochloride is injected into the vascular adventitia.

When the collapsed brain does not have a tendency to expand again, not even after intraventricular injections, (this happens mostly in old persons with hematoma not caused by trauma) one should think that, in addition to other lesions like cerebral atrophy, there is a pronounced vasospasm difficult to eliminate. Professor Chiasserini believes that in these cases one should resort directly to bilateral cervical sympathectomy where justified by the patient's condition or else to bilateral blockings with procaine hydrochloride repeated and completed by administration of eupaverin ($C_{20}H_{15}O_4N$).

The same procedure may be attempted in some post-traumatic and postencephalitic cerebral atrophies. The speaker has operated only on six such patients, and therefore an evaluation of the results is premature.

NORWAY

Merits and Faults of Norwegian Hospitals.—On Feb. 2 an address was delivered at a meeting of the Norwegian Medical Society entitled "Features of the Development of the Functions and Administration of Hospitals" by Dr. Karl Evang who is head of the Norwegian Public Health Service. By virtue of this post and the prestige he enjoys in the field of international medicine, Dr. Evang felt free to speak plainly about the faults as well as the merits of the Norwegian hospitals at the present time. They are, as a rule, "closed" in the sense that they are staffed by full-time physicians and are primarily concerned with intramural activities, such extramural activities as the supervision of patients after discharge being no obligatory concern of theirs. The treatment given at these hospitals shows no discrimination reflecting on the patient's finances. Indeed, much of the financing of these hospitals is undertaken by the state, by local authorities, or by semipublic institutions. Dr. Evang believes that the medical quality of the work of these hospitals, their diagnostic and therapeutic efficiency, compares favorably with conditions in other countries with approximately the same cultural level. "On the whole we administer our hospitals in Norway more cheaply, more effectively and with a simpler administration apparatus than most of the countries which have achieved just as high a medical standard as we have."

But Dr. Evang does not find that the Norwegian hospitals have kept pace with certain Anglo-Saxon and Slav countries whose hospitals have opened their doors to such extramural activities as polyclinics or other forms of ambulant treatment, systematic aftercare of patients with special provisions for convalescents and chronically ill patients, rehabilitation, and social welfare supervision. To be sure, most sizable Norwegian hospitals do undertake one or more of these activities, but they are apt to ignore the general practitioner instead of cooperating closely with him. The general practitioner and even the specialist is liable to be cut off from his own patient while he is in a hospital. Any physician who has worked as a general practitioner in Norway for some time knows what it is to send a patient to a hospital and to meet him again after his discharge when the following conversation takes place: "Yes, thank you, Doctor, all went well, and the operation was successful, but what was it they took out of me at the hospital?" to which question the physician can give no answer. In many parts of Norway the aftercare of convalescents and chronically ill patients is poor, the organization of the hospitals depending on the welfare of only acutely ill persons. It is this unfortunate state of affairs that is prompting the desire for hospital administration that, with a more regional character, would provide for more continuity of treatment.

Laymen or Physicians in Charge of Hospitals?—Dr. Evang discussed the question of whether a hospital should be under the administrative charge of a physician or of a layman with special training and aptitude for such work. With his rare opportunities for studying hospital administration in many different countries, Dr. Evang confessed to his inability to detect any definite tendency in either direction, though it must be admitted that in some large countries with a high hospital standard there seems to be a gradual inclination to replace physicians by laymen at the head of affairs. This is so with certain Anglo-Saxon countries, whose hospitals are of the "open" type as distinct from the "closed" type in vogue in Norway. The two types are therefore hardly comparable. It is curious that, though the Scandinavian countries are alike in many respects, Sweden and Denmark have largely reverted to laymen administration of hospitals, while Norway continues to confide the administration of almost all its hospitals to physicians. In this connection it is noteworthy that the cost of hospital administration is considerably lower in Norway than in Sweden or Denmark. The owners of the hospitals, the state and local authorities, are apt to clamor for closer scrutiny of hospital administration when they see how modern treatment increases expenses. They do not always realize that expensive modern treatment is also comparatively short treatment and therefore cheaper in the long run. In his advocacy of the physician administrator in preference to the layman, Dr. Evang pointed out that the latter is in an anomalous position, having to choose between the lay and the medical viewpoints. In any case, he is likely to feel that he is not on the same level with physicians. The administrator who is qualified as a physician is in a stronger position to protect his hospital from exaggerated claims by medical enthusiasts.

Mental Disease Problems.—Dr. Christofer Lohne Knudsen, who is the state's senior medical officer for psychiatry, has drawn attention to the main problems and solutions concerned with mental disease in Norway at the present time. In recognition of the psychiatric side of alcoholism, the state appointed, in 1949, a physician to serve as physician-in-charge for the care of alcoholic addicts. In that year there were some 22,000 persons referred to the official sobriety board as suffering from the effects of alcohol. There are already some 280 hospital beds reserved for them, and there are plans for adding to them in the near future a psychiatric hospital with about 50 beds.

A census by the public health service in July, 1949, showed that at this date there were 16,170 cases of actual insanity in Norway. For their accommodation the country's 22 asylums could offer only 6,392 beds. Yet the number of patients filling these asylums was 7,830—a state of overcrowding that helps to explain why prisons are being taken into use to house mental cases. For this reason Norway needs between 4,000 and 5,500 more asylum beds. The housing of mentally defective persons, of whom there are between 32,000 and 43,000 with an intelligence quotient of under 75, is also an acutely distressing problem. While a minimum of 5,200 beds are needed for low grade mentally defective persons, the actual accommodation available is only 1,115 beds. To help meet this difficulty, the law of July 28, 1949, provides for the financing of special homes for these patients at public expense. At the same time legislation was adopted to promote the institutional treatment of epilepsy. Early in 1951 the prison of Ilebu was rechristened Ila and was converted into a hospital for some 150 male psychopathic persons, whose actions brought them in conflict with the law. It is ironical that male criminal psychopaths are thus provided with special quarters but no special residential treatment is yet provided for female criminal psychopaths nor for psychopaths of either sex not in conflict with the law. Dr. Lohne Knudsen also drew attention to the great disparity between the numberless cases of neurasthenia and neurosis on the one hand and the little more than 300 hospital beds now available for them in certain psychiatric clinics. It is impossible to calculate the number of hospital beds needed for these patients, but every central hospital planned or under construction should be provided with a psychiatric department to deal with them.

Death of Prof. H. Rasmussen.—The sudden and unexpected death of Haakon Rasmussen early in April has deprived the young University of Bergen of its first professor of medicine. He was born in Bergen on Aug. 27, 1906, and was educated there and in Oslo. After a short period of general practice he pursued a scientific career, holding many hospital appointments as well as studying abroad. His patriotic activities during the war resulted in a year's imprisonment by the Germans. The title of his doctoral thesis in 1941 was "The Influence of the Thyroid Hormone on the Heart and Circulation: Experimental Investigation in Dogs." His professorship of medicine put him, in 1947, in charge of the medical side of the Haukeland Hospital in Bergen. Here he pursued his scientific studies with tireless energy and set the pace for all those working under him. Though his bent was largely that of the dispassionate scientist, he was delightfully human to those who knew him well. His latest book was on the dangers of obesity.

PARIS

Isolation of Coxsackie Virus.—Various authors have isolated and identified a virus of the Coxsackie type from the stools of patients with epidemic myalgia, or pleurodynia, also called Bornholm's disease, or from persons contaminated in the laboratory while manipulating the virus. The correlation between epidemic myalgia and the presence of the virus in the stools appears, at first sight, as being well established. But, when analyzing the numerous clinical syndromes, such as estival influenza, nonparalytic abortive poliomyelitis, pseudoherpetic angina of nurslings, aseptic meningitis, and virus encephalomyelitis (Guillain-Barré's syndrome), in which viruses of the Coxsackie type are present, the question arises as to whether the virus is really playing an essential etiological part in epidemic myalgia or whether the presence of a virus in a patient's stools is the result of a coincidence. Up to now, the presence of the causal agent in the muscles of persons suffering from epidemic myalgia has not been ascertained. M. Lépine and his associates of the Pasteur Institute had, during the summer of 1951, the opportunity of observing a large number of patients with epidemic pleurodynia and of taking biopsies from the muscles of patients at the site of maximum pain. Histological examination revealed an inflammatory infiltration and all degrees of alteration and hyaline degeneration of muscular fiber, lesions identical to those found in young mice experimentally inoculated with Coxsackie virus.

They inoculated the biopsy specimen of muscle into newborn mice. Typical lumbar paralysis developed in all of them on the third to fifth days, and in all generalized and histological lesions of Coxsackie were present; moreover, stools of the same patient taken on consecutive days were inoculated into a litter of newborn mice, causing a typical paralysis on the fourth and fifth days respectively. Another fact of interest was that a subsequent litter of the mouse that had fed the infected animals proved resistant to the virus taken from the muscles of the same patient, which revealed that the virus extracted from the stools and muscles was the same. In a case of typical myalgia with relapse, muscle specimen taken during the relapse revealed histologically an inflammatory infiltration and proved to be infectious in eight young mice, while stools taken at the same moment contained viruses. Lépine, in his communication of Feb. 5, 1952, to the National Academy of Medicine, stressed that these researches confirm, for the first time, the etiological value of the finding of a virus of the Coxsackie type in the stools of patients suffering from epidemic myalgia.

Death of Professor Brumpt.—A great scientist, Prof. Emile Brumpt, the parasitologist, died at the age of 74. He had a brilliant career and became a doctor of medicine in 1906, professor "agrégé" of parasitology and medical natural history in 1907, titular professor of parasitology at the Paris Faculty of Medicine, and member of the National Academy of Medicine in 1919. His scientific works are numerous. In 1901, while crossing tropical Africa, he studied African trypanosomiasis and suspected that Glossina palpalis was a vector of this disease; he explained the mechanism of transmission of American trypanosomiasis by hematophagous Reduviidae; he studied piroplasmosis of domestic animals and developed a vaccination for cows. He perfected xenodiagnosis, and he distinguished pathogenic amoebas from nonpathogenic amoebas. In Corsica he discovered the life cycle of Schistosoma bovis and, subsequently established experimentally the complete cycle of human schistosomiasis. During his last voyage to Ceylon, he isolated Plasmodium gallinaceum in a hen, a strain much used for studying the chemotherapy of malaria. Brumpt did not hesitate to perform trials on himself. In Abyssinia, by having himself stung by an Ornithodorus, he proved that it was not the vector of relapsing fever in this region; he inoculated himself with certain monomorphic trypanosomes in order to prove their innocuity. Of international repute, he often lectured abroad, specially in South America; he was nominated honorary professor at the faculties of Montevideo, Mexico, Pueblo, and São Paulo, and professor honoris causa of the latter faculty and at Cairo. He was appointed a member of the academies of Turin, Rome, Rio de Janeiro, and Romania, of the Royal Academy of Belgium, and of the Indian Academy of Sciences. He was awarded important distinctions: the Patrick Manson Medal of the Royal Society of Tropical Medicine, the Gold Medal of the Tropical Medicine Institute of Hambourg, and, quite recently, the Theobald Smith Medal of the American Society of Tropical Medicine. He created the *Annales of Parasitology*, a journal of research in the field of parasitology.

SPAIN

Urologic Lectures.—A course of urologic lectures on "Value of the Various Surgical Techniques for Treatment of Prostatism" was given at the urology ward of the faculty of medicine of the Madrid University, March 20-22, 1952. Drs. Oreja Elósegui of San Sebastián, Edward N. Cook of the Mayo Clinic of Rochester, Minn., Gil Vernet of Barcelona, and A. de la Peña of Madrid were the lecturers. Dr. Gil Vernet discussed perineal techniques in treatment of obstruction of the neck of the bladder. He pointed out that these techniques, in general, involve long hazardous operations. Some Spanish urologists perform section of the urethra at the level of the apex of the prostate. The enucleation is made through the lower part of the structure, and the anastomosis is urethracervical. The speaker favored early rising of the patients after the operation and the use of a Foley's balloon and mass suture of the lateral regions of the neck of the bladder. He described Dr. Serrallach's technique, which includes prerectal incision, detachment of the anatomic planes, median longitudinal opening of the capsule and enucleation through the apex of the prostate, intraurethral use of Young's instrument, and hemostasis by means of Foley's balloon with stitches in a figure eight on both sides of the vesical neck. After the operation the reconstruction of the urethra can be verified through use of cystographic examination.

Dr. Oreja Elósegui dealt with "Techniques and Value of Suprapubic Surgery in the Treatment of Obstruction of the Neck of the Bladder." The speaker reviewed his own statistics, which covered a period from 1920 to 1928. In 1928 he reported on prostatectomies that he had performed both in two stages (323 cases) and in only one stage (954 cases). The rate of mortality of 4.2% was principally caused by the following: shock, pneumonia, embolism, and uremia. Less frequent complications were pyelonephritis, phlebitis, cardiopulmonary diseases, and epididymitis. With the discovery of antibiotics in 1946 and the use of good antihemorrhagic techniques the rate of mortality dropped to 2.2%, certain old surgical postulates disappeared, and the use of fixation of the bladder to the abdominal wall was discontinued. In 90% of the cases the period of hospitalization was lowered to less than nine days. The speaker prefers local procaine hydrochloride (novocain®) anesthesia for cystotomy and general anesthesia for prostatectomy.

Dr. Edward N. Cook discussed the pathogenesis and symptoms of prostatism and reported on his experience with transurethral resection in more than 6,000 cases. The speaker emphasized that patients with signs of irritation owing to prostatism are not candidates for surgery.

Dr. A. de la Peña compared retropubic and transurethral techniques in the various forms of prostatism. He favored Millin's technique, which he believes represents great progress in surgery of the prostate, despite the fact that this technique is followed by sclerosis of the neck in at least 18% of the cases.

TURKEY

Effect of Streptomycin and Sulfonamides on Glanders.—In the Turkish *Bulletin of Hygiene and Experimental Biology* Turgut Tulga, D. V. M., of the Military Veterinary Biological Institute, Ankara, has published the results of his experiments on the effect of antibiotics on glanders and on the action of streptomycin and sodium sulfamethazine ("sulmet") in guinea pigs infected with glanders.

Human glanders is rare in Turkey. According to the Ministry of Health and Social Assistance, only 18 cases were reported during the years 1938 to 1948; all were fatal. During the last three years four patients from the environs of Ankara who had acute glanders were admitted to the Ankara General Hospital. The clinical diagnosis was confirmed by bacteriological and serologic examinations. In 1949, a young farmer, whose horse died two weeks prior to his admission, had septicemia. After taking 50 gm. of streptomycin and 60 gm. of sulfadiazine, the patient recovered. During the following 18 months no relapse occurred. In 1950, the second patient, a young blacksmith with acute glanders, was given streptomycin and sulfadiazine and recovered. After seven months the patient had a relapse. He was cachectic and had a large phlegmon on the cheek; x-ray examination revealed lesions on the lungs, and the patient was in great pain. From material obtained by puncture from the abscess on the left tibia, Malleomyces bacilli were isolated. Serologic examination confirmed the diagnosis. Streptomycin and sulfadiazine improved the patient's condition temporarily. The external lesions soon disappeared, but the metastasis to the inner organs caused the death of the patient two months later. The third patient was a farm boy. Because of paronychia on the thumb, he was admitted to the surgical department. Soon after intervention the patient's joints became painful, swelled, and reddened, and his temperature rose. Then it was learned that he had helped with the skinning of a dead horse. The patient was isolated and given streptomycin and sulfadiazine therapy. He recovered after two months. Malleomyces bacilli were isolated from the pustule on the cheek. The fourth patient was admitted in October, 1951. From the patient's blood serum and abscess Malleomyces bacilli were recovered. This patient was given sulfadiazine every four hours and recovered.

Concerning his observations on the action of streptomycin and sodium sulfamethazine on glanders-infected male guinea pigs, microbiologist Dr. Turgut Tulga reported that the animals, weighing from 350 to 380 gm., were given intraperitoneal injections with different strains of Malleomyces isolated from patients. In all animals orchitis developed but not fistulas. Eighteen infected control animals died after 12 to 15 days. Animals receiving streptomycin therapy were given 28 mg. per kilogram of body weight per day, subcutaneously or intramuscularly; an average dose of 10 mg. was given, either at 6 hour intervals or 5 mg. twice daily. Treatment was begun 12, 24, and 48 hours after the infection and was continued 12 to 14 days. All animals died from 12 to 23 days after the infection. Sodium sulfamethazine was given subcutaneously, 330 to 660 mg. per kilogram of body weight per day.

The initial dose for each of eight guinea pigs was 250 mg. of sodium sulfamethazine 16 hours after the infection and thereafter 125 mg. every 12 hours for 14 days. The initial dose for each of 11 guinea pigs was 125 mg. 24 hours after the infection. Thereafter the daily dose of 125 mg. was given in four doses with an interval of six hours. When on the seventh day symptoms of glanders appeared, the dose was increased to 250 mg. given in four doses with an interval of six hours. Two animals in this group died 11 to 12 days after the infection. Ten of 11 control animals died from 9 to 16 days later; one lived for 21 days.

In another test, seven animals were given sulfamethazine therapy, begun 16 days after the infection, in the same dose as used in the group receiving sulfamethazine 16 hours after the infection. Similar results were obtained. The surviving 24 animals were held eight months for observation. They were obviously in good health and had gained 250 to 360 gm. No pathological changes were found at necroscopy, and cultures were negative, indicating the effectiveness of sodium sulfamethazine in the treatment of acute experimental glanders in guinea pigs. Streptomycin had no effect.

CORRESPONDENCE

SHOE DERMATITIS

To the Editor:—I am very much interested in shoe dermatitis. To gain the proper perspective of this subject, I believe it is important to recognize that sweating is a continuous secretion. During episodes of thermal sweating, there is a tendency for there to be less psychic sweating from the palms, soles, and axillae; however, with the lowering of the thermal threshold, there occurs a compensatory outflow of so-called psychic or emotional sweat. A careful review of this subject in the past has disclosed that American physiologists have paid little, if any, attention to the subject of psychogenic sweat. In fact, two current monographs on this subject have been thoroughly reviewed, and no reference was found. I believe that we have overlooked a vital physiologic principle. Certainly, the ridicule would be great if we were to interfere with the secretion of tears, saliva, or bile, to say nothing of the kidneys. The importance of these physiologic principles are recognized, but just as important is the function of psychic sweating. It is most interesting to consider how we have violated this physiological principle. Present day efforts are directed at trying to stop it. Thus we see a fair incidence of axillary dermatitis, and, of course, dwarfing this incidence is that of pedal dermatitis.

I believe it is true that whenever a physiological function is interfered with, we can expect a train of sequelae. The commonest complaint we encounter is a patient stating, "My feet sweat terribly." This is wrong because it is not their feet, but it is impervious material preventing evaporation. Along the same line, parents complain of children continually kicking off their shoes. Children prefer that their feet be comfortable. They complain that their feet are hot. Consider the incidence of wet, soggy toes, so-called dermatophytosis, bromidrosis, and symmetrical lividities, to say nothing of the disturbance in epithelial functions of the skin of the foot.

I noticed in a recent issue of THE JOURNAL (148:940 [March 15] 1952) a discussion on frostbite. About six months ago, I corresponded with Dr. E. R. Hering. He was at the area of operations at the time so many Marines were incapacitated by frostbite. I am sure you will be interested in the following portion of his letter:

"Since my return from Korea, I have been rather deluged with requests for options on various methods of control of frostbite, such taking the form of a chemically heated insole, a completely insulated boot, etc., all of which ignore the primary factor, which, in my opinion, is the production and nonabsorption of the perspiration produced by exertion. It is interesting to note that on our way up to and during the advance phase in the Reservoir, although we were operating under similar weather conditions, no frostbite of any magnitude occurred. This was due, I believe, to the fact that warming tents, on the basis of two per platoon, were manned by hospital corpsmen in close proximity to the front and every Marine had to report at least once a day for foot inspection and change into dry socks. The psychic factor may play a part, but actually I think those men were beyond psychic stimulation." Apparently, a short time later, Bell, Stahlgren, and Sherer (*U. S. Armed Forces M. J.* 3:35 [Jan.] 1952) saw many of the casualties that had been removed from the Korean theater. Footgear consisted of waterproof boots. These authors concluded that one of the important factors in the high incidence of frostbite during the 12 day retreat was "Feet constantly wet because of excessive perspiration within waterproof boots and inadequate foot care." There has been a trend in the past quarter century to the use of impervious materials in footgear. These materials prevent the evaporation of thermal, insensible, and psychogenic sweat. As a result, there occurs a train of symptoms and signs on the feet that, today, we lightly pass off as a touch of fungus infection. In the past year, I have confirmed again and again the invaluable contribution of Nickerson on the importance of wearing absorbent sandals and/or shoes. How simple this is—to allow the thermal and psychogenic sweat to evaporate and thus the pedal symptoms and signs to subside.

I believe the A. M. A. could perform an outstanding job of public relations by an adequate discussion of this entire subject.

L. EDWARD GAUL, M.D.
509 Hulman Bldg.
Evansville, Ind.

DURATION OF PREGNANCY

To the Editor:—The work that was described by Dr. H. L. Stewart Jr. in his article "Duration of Pregnancy and Postmaturity" (*J. A. M. A.* 148:1079 [March 29] 1952) has, without doubt, cast much light on the true duration of pregnancy. In a group of 135 women, he was able to determine the elapsed time between ovulation or conception (as detected by the basal body temperature method) and the onset of spontaneous labor. He found that this interval ranged between 250 and 285 days, with an average of "266 to 270 days." Furthermore, he was able to demonstrate that, in his series, what seemed to be prolongation of pregnancy was only apparent, being due to the fact that duration was counted from the first day of the last menstrual period. This led to errors in the estimate of pregnancy duration when ovulation was unusually delayed after the last period.

He goes further, however, and states "The maximum limit of human pregnancy from ovulation to spontaneous onset of labor and delivery of a full-term, living baby would be 285 days, according to these data." He suggests the application of these data to medical jurisprudence in determination of paternity. He says, "Decisions establishing paternity within a period of 300 days from the last coitus are reasonable, but longer periods seem most questionable and are conspicuous by the complete absence of any supporting data from this study."

The obvious vast importance of this latter concept to medical jurisprudence justifies closer examination of this question, for fear that the application of such criteria might lead to unwarranted injustice.

The total of Dr. Stewart's data is not presented in his article (undoubtedly for reasons of space), but fortunately chart 1 (page 1080) provides data on 34 of his cases (those in which ovulation was 16 days or more from the previous menstrual period). Conclusions drawn from this sample would apply only to women who have a similar relationship between ovulation and prior menstruation. Although it would be interesting to study all of Dr. Stewart's cases, investigation of the sample available will yield valid, if less generally applicable, conclusions and will demonstrate the technique of statistical reasoning that can be used with profit in handling biological data.

1. A graphical plot of the cases in chart 1 revealed that their frequency followed the normal distribution curve; moreover, a check of these data with the normal curve by means of the chi-square test demonstrated reliable goodness-of-fit, which means that the normal distribution curve can be used with confidence in dealing with these data. This means that cases close to the average in duration appear most commonly, and those cases that are very far from the average are found only very rarely. This is logical, for highly intelligent persons are much less common than persons of average intelligence; very tall persons are much less common than those of average height, etc.

2. That persons in whom the duration of pregnancy (for example, 305 days) differs from the average (268 days) by a large number of days will be encountered only very rarely leads to the following conclusion. A failure to find cases of true pregnancy duration of 305 days in a series of 135 women does not mean that no such cases would be found in a series of 10,000,000 births. Indeed we might have suspected that Dr. Stewart would not have come across the unusual extremely prolonged pregnancy in only 135 deliveries. Prediction of the rate of occurrence of unusual cases can be done only by the study of vast series of cases or by application of statistical techniques as illustrated below.

3. Further statistical examination of the data in chart 1 in Dr. Stewart's paper revealed that the average or mean of the group was 267.94 days (rounded for the purpose of discussion to 268 days) and a "standard deviation" of 8.36 days. The exact meaning of the last entity can be obtained best from any good textbook of statistics. These two statistical values can be used to calculate the probable frequency of occurrence of rare cases. This has been done in part in my table. In column A is given a series of arbitrary maximum limits of duration of pregnancy, and in column B is given the corresponding probable incidence of cases in which the duration of pregnancy would be greater than this supposed limit and in which the mother might have been subjected to entirely untrue suspicion. It will be noted that application of the limit of 300 days as recommended by Dr. Stewart would lead to a judgment of error in one case in every 31,000 births. To say that a pregnancy lasting 310 days from ovulation to onset of labor is extremely rare is quite different from saying that it cannot occur. It is just these unusual cases that are likely to come to court.

Column A	Column B
Arbitrary Maximum Limit of Duration of Pregnancy in Days	Approximate Probable Incidence of Pregnancies Exceeding Supposed Upper Duration Limit of Pregnancy
284	1 case in 42 births
293	1 case in 740 births
301	1 case in 31,000 births
310	1 case in 3,400,000 births

4. Any such calculations can apply only to women who come from a group whose characteristics are very similar to the sample studied. It is entirely possible that women of other races or environments might have considerably different durations of pregnancy.

5. The establishment of an upper limit for the duration of pregnancy is as difficult as discovering the maximum intelligence of a human or the maximum height of a man. It certainly cannot be approached with other than very large samples.

6. From these considerations, it is probable that the duration of pregnancy is a poor test of paternity. Pending vastly greater experience, it would seem that genetic tests (for example, blood types) are much more reasonable in ruling out paternity. Cases in which there are remote errors (for example, mutation) would be much less likely to come to court and hence would be involved only in proportion to their incidence; for example, a blood type mutation that occurs once in a million births would lead to error only once in a million paternity suits. An excessively long duration of pregnancy that occurs once in a million births is much more likely to come to court, since prolonged pregnancy is one of the grounds for suspicion. It could conceivably occur once in every 50 paternity suits, and an error of one case in 50 would be most unfair to the parties concerned.

Lester M. Levy, M.D.
Department of Endocrinology
Philadelphia General Hospital
Philadelphia 4

ROENTGENOLOGIC CONTROL OF NERVE BLOCKS

To the Editor:—In regard to the use of iodopyracet (diodrast®) in the control of nerve blocks (Alexander, F. A. D., and Lovell, B. K.: *J. A. M. A.* **148:**885 [March 15] 1952), I feel that a note of caution should be sounded. Urologists and radiologists not infrequently see x-ray evidence of inadvertent extravasation of this medium into the perirenal and periureteral spaces. This occurs when retrograde pyelography is done in the early postoperative period following renal, pelvic, or ureteral surgery. The medium may escape through incompletely healed renal, pelvic, or ureteral incisions. This also occurs when the medium is injected through a ureteral catheter that has inadvertently perforated the ureter or renal pelvis or parenchyma. Since the extravasation of the contrast medium is per se quite painless in deeper tissues, little attention has been paid to this occurrence.

Recently I operated on a patient whose renal pelvis was encased in dense scar tissue. Three months previously retrograde pyelography had been performed on her elsewhere and about 15 cc. of iodopyracet had extravasated into the peripelvic space. This experience led me to investigate the effect of iodopyracet on the perirenal and periureteral tissues of rabbits. From 5 to 15 cc. of the substance in the same concentration used by the authors was injected in these areas in rabbits, who were then killed at intervals from several days to several weeks. Gross and histological studies of the tissues revealed an early florid sterile inflammatory reaction leading eventually to sclerosing lipogranuloma and dense fibrosis. From these findings I concluded that extravasation of iodopyracet in the perirenal and periureteral spaces is not innocuous but on the contrary may cause considerable damage by producing obstructing strictures (Landes, R. R., and Hooker, J. W.: *J. Urol.*, to be published). Whether perineural fibrosis takes place and whether this may cause permanent damage should be considered in using the described technique.

Ralph R. Landes, M.D.
745 Main St., Seminole Bldg., Danville, Va.

OBSTETRICS IN ARABIA

To the Editor:—You may be interested in some information on obstetrics in Arabia, which is so different from that in America that it is almost unbelievable. I spent two years in Arabia just after the new hospital had opened and when women were fearful of entering unless they were at death's door. The picture is rapidly changing, and more and more normal patients are coming in as they learn our western ways.

Of 150 deliveries from July, 1950, to July, 1951, at the Arab hospital in Dhahran, Saudi Arabia, 110 were normal and 40 were complicated. There were no maternal deaths, and there were 15 prenatal deaths. There were 3 ruptured uteri, 1 marginal placenta previa, 1 central placenta previa, 1 ruptured bladder, 1 head appearing at the anus through the rectum rather than through the vagina, one hand presentation, one patient admitted with all delivered but the head for two days, 4 breech presentations, 4 midforceps and 5 low forceps deliveries, and 11 vaginotomies.

Most of these complications were due to the crude custom, centuries old, prevalent in the Middle East, of packing the vagina with salt following the birth of the baby, theoretically shrinking the vagina so that the women will again be pleasing to their husbands. Actually this causes adhesions, increasing with each pregnancy, so that after the third or fourth pregnancy the vagina may be completely sealed off as if a door had been plastered over. By speculum examination there is no opening, and a new opening must be made by scissors between bladder and rectum, avoiding the uterine arteries. Bleeding is minimal and tamponaded by the head so that no sutures are required.

Evelyn Rude, M.D.
222 E. Maple St., Enid, Okla.

MEDICAL MOTION PICTURES

Mental Symptoms: A series of nine films produced in 1951 by the National Film Board of Canada for the Mental Health Division of the Department of National Health and Welfare. Procurable on purchase from McGraw Hill Book Co., Text Film Department, 330 W. 42nd St., New York.

No. 1.—Schizophrenia Simple Type Deteriorated, sound, showing time 11 minutes, $35.
No. 2.—Schizophrenia Catatonic Type, sound, showing time 11 minutes, $35.
No. 3.—Schizophrenia Hebephrenic Type, sound, showing time 12 minutes, $45.
No. 4.—Paranoid Conditions, sound, showing time 12 minutes, $45.
No. 5.—Organic Reaction Type Senile, sound, showing time 10 minutes, $35.
No. 6.—Depressive States #1, sound, showing time 12 minutes, $35.
No. 7.—Depressive States #2, sound, showing time 11 minutes, $35.
No. 8.—Manic State, sound, showing time 14 minutes, $55.
No. 9.—Folie à Deux, sound, showing time 14 minutes, $55.

Each of these films shows a patient, with a particular psychiatric syndrome, in a casual, loosely structural interview, or conversation, with a psychiatrist. The specific disorders illustrated are indicated by the list of titles mentioned above.

Comments on Entire Series.—These are excellent films for teaching purposes. They are obviously designed to serve the same function as would a clinical demonstration of a patient—and no more. The films are admirably suited for use as adjuncts to a lecture or discussion by a competent person. The availability of such films provides dual advantages. 1. This clinical material is brought into the classroom without subjecting patients to repeated "exhibitions." 2. Patients are now available, through film, to many institutions and agencies that ordinarily would not have any patients or a sufficient variety of patients to utilize clinical demonstrations of psychiatric disorders.

Sound motion pictures make possible a kind of vivid experiencing of examples of mental disorders, which can never be achieved from verbal descriptions. The viewer's simultaneous reactions to the general appearance, carriage, dress, gestures, movements, facial expressions, emotional responses, and verbalizations of the patient make a vivid and lasting impression that is much more meaningful, integrated, and permanent than the labored synthesis of a paragraph of descriptive material. Furthermore, this type of presentation in the classroom permits in attenuated form an emotional response to the impact of the psychiatric patient quite comparable to that experienced in a face to face contact. This is accomplished, however, in a classroom setting where the viewer has no immediate responsibility to the patient—thus no need to conceal or deny the fear, sympathy, revulsion, shame, or any other reaction to the clinical material. This opportunity to experience these reactions "in small doses," recognize, and gradually begin to deal with them is of inestimable value in the preparation of personnel to work with psychiatric patients.

Finally, there is the multitude of material offered for the discussion of psychopathology. A wide variety of disturbances of perceptual, intellectual, affective, and motor processes are to be found in the various patients filmed. Specific aspects of pathological functioning can be singled out for discussion and can be seen in relation to the other facets of the patients' behavior at the time. One technical deficiency in the films offers some limitation here; at times, it is difficult to hear the patient's comments, and thus some of the indications and illustrations of the pathology present are not so readily apparent as would be desirable.

Comments on Specific Films.—"Schizophrenia Simple Type Deteriorated." There may be considerable question as to this patient's being considered a "simple" schizophrenic. It is not the best choice of patient. It would seem to be unquestionably inaccurate to label this condition "deteriorated." Too much ego preservation is apparent. Again, in the film itself, the condition is described as "chronic." This appears to be much more accurate, since the patient's behavior shows many direct indications of the chronicity of the illness.

"Schizophrenia Hebephrenic Type." The sound is poor.

"Depressive States #2." The second patient shown is described as suffering from a "reactive depression." The choice of patient to illustrate this syndrome appears to be an unfortunate one. Depressive features are evident; bandaged wrists indicate the recent suicidal attempt. This does not, however, appear to be a reactive depression at all. The specific external precipitating stress to which the patient should be reacting with depression is almost categorically denied. The diagnosis is highly questionable.

"Manic State." This film appears to be somewhat mislabeled. In the narration the patient is described as a "hypomanic," which seems to be a more accurate description of the condition portrayed. It is particularly difficult to hear this patient's verbilizations.

These films should be useful with a wide variety of student groups. Any course of instruction in psychiatric syndromes and psychopathology in a mental hospital could profitably utilize this material, e. g., with psychiatric residents, nurses, psychiatric aides, and clinical psychologists. Courses in psychiatry for medical students and courses in abnormal psychology for advanced university students could effectively utilize these films. They would also be valuable for use with students in advanced psychiatric nursing programs as well as in conjunction with the basic nursing students' psychiatric affiliation. These fill a long-standing need and contribute much to psychiatric education.

Out of True: 16 mm., black and white, sound, showing time 41 minutes. Produced in 1951 by Crown Film Unit. Procurable on rental ($5) or purchase ($150) from International Film Bureau, 57 E. Jackson Blvd., Chicago.

This film deals with a young mother of two children, her psychotic breakdown, flight into an unsuccessful attempt at suicide, her hospitalization in a mental institution, and the type of treatment she received that led to her recovery. Her hostility to her mother-in-law, stemming from her earlier hostility to her own mother, are brought out as the basis for the breakdown. Depicted also are the interviews with the husband and mother-in-law by the hospital physician and by the social service case worker. Through these interviews both husband and mother-in-law are helped to resolve their ignorance and prejudice regarding the significance of mental illness and to accept the need for treatment of the patient. Modern hospital treatment methods, such as intravenous amobarbital (amytal®) injections, electroshock treatment, group therapy, and physical rehabilitation, are shown. Kind sympathetic attitudes on the part of the nurses towards the patient and the informal spontaneous friendships formed between patients further emphasize the therapeutic atmosphere of the hospital.

It is a good presentation of the various treatment techniques and of the functions of a well-staffed modern psychiatric hospital. There may be a danger that the treatment program shown is oversimplified, since the ease with which everything comes about could mislead lay audiences about the complexity of psychiatric treatment and the time necessary for effective treatment. Immediate orientation is difficult because of the abruptness of the beginning of the film. The photography and acting are well done and are handled with imaginative creativeness. The sound is fair. The film can be used effectively with both professional and lay audiences if followed by a discussion led by someone engaged in mental health work.

The Billion Dollar Malady (The Common Cold): 16 mm., black and white, sound, showing time 14 minutes. Produced in 1952 by and procurable on rental ($3.50) or purchase ($75.00) from Bray Studios, Inc., 729 Seventh Ave., New York 19.

This film begins by emphasizing the statistical facts about colds, pointing up the effects in loss of time and efficiency in industry and the cost of drugs and medical care. It then portrays what we know about colds, their causes, how to avoid them, and the importance of maintaining good health as a vital safeguard. Essentially the film is scientifically accurate. Points that might be criticized are the impression given that all colds are due to viruses and the lack of stress of the factor of secondary bacterial invaders. The demonstration of ciliary action is poorly contrived. The photography and narration are satisfactory. The film can be recommended for lay audiences, hygiene classes in grades seven and up, industrial workers, and nurses.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Optometry Practice Acts: Qualifications of Applicants for Examination.—Forty-one petitioners joined in a proceeding against the Board of Regents of the University of New York to restrain the regents from prohibiting the petitioners from taking the next optometry board examination. The case was heard in the supreme court, special term, Albany County, New York.

The petitioners are four groups of persons, each group having graduated from a different optometry school. They have been refused the right to take an examination by the Board of Regents, the passing of which would entitle them to become licensed optometrists in the state. Some of the petitioners sought to file for the examination held on June 16, 1950, but were advised by the Department of Education that their applications would have to be filed a month before the meeting of the Board of Regents, at which action would be taken on such petitions and that another licensing examination was scheduled for Oct. 3 to 6, prior to which time their application would be acted on. Some time after June, 1950, they were informed that the State Education Department had under review fundamental policies in the field of optometry and that on completion of the study the several petitions would be submitted to the regents for consideration and that the examination had been deferred until late November or December. On or about Nov. 22, 1950, petitioners were advised by the department that the Board of Regents, at a meeting held on Nov. 17, 1950, had adopted the following policy with respect to graduates of schools of optometry that are not registered by the department: "*Moved:* That applicants be admitted to the licensing examination in optometry upon presenting evidence of completion of the final year of study in a registered school of optometry or of completion of a postgraduate course of study of at least one year in such an institution," and further advising the petitioners as follows: "Therefore, you will not be eligible for consideration for admission to our licensing examination until such time as you have complied with the above policy."

The petitioners conceded that the colleges from which they graduated were not certified by the State Department of Education but asserted that these schools had been duly approved and recognized by the American Optometric Association, the United States Veterans Administration, and 46 states of the union, and, furthermore, for a period of more than 10 years prior to this action, the Board of Regents had permitted graduates of these schools to take the examination. In fact, certain of the students who graduated with the petitioners and who filed in time for the June examination had been permitted to take that examination. The petitioners also stated that on entrance to their schools certain of the petitioners had communicated with Dr. Conroe, Assistant Commissioner of Education, who had the profession of optometry in his charge, stating that they were students of said college and inquiring as to the procedure required to take the examination, that they had received replies from Dr. Conroe, and that no statement was contained in these replies that the schools that they were attending were not recognized. In reliance on the policy pursued by the department for over 10 years, they enrolled in these schools, many of them with the aid of benefits under the Veterans Benefit Act, and their finances were now exhausted. They said they cannot comply with the requirement of an additional year of study in a registered school of optometry because the schools will not accept students for the one year course.

The State Education Law, at the time these petitioners filed their applications, provided that "after January first, nineteen-hundred thirty, [the applicant must show that he] has graduated from a school of optometry conducted as a department of a university registered by the regents with either the degree of bachelor of arts or that of bachelor of science and a certificate of graduation in optometry." For more than 10 years, however, students who were graduated from the same schools as the petitioners were permitted to take the examination, although the above provisions of the Education Law requiring graduation from a school of optometry registered by the regents were in effect.

The petitioners, therefore, alleged that the action of the Board of Regents in denying them the right to take the examination was arbitrary, capricious, discriminatory, and unfair, and they asked that the action of the Board of Regents be annulled.

There can be no question, said the court, that the Board of Regents is clothed with the power and authority to determine the qualifications that are required for admission to the examination, and this discretion reposed in the Board of Regents is not to be disturbed unless, in the exercise of the discretion, the action of the Board of Regents is arbitrary, capricious, discriminatory, or unfair. The sole question for determination here, continued the court, is whether the action of the Board of Regents, in refusing to permit these petitioners to take the optometry examination, was arbitrary, capricious, discriminatory, or unfair.

These petitioners entered the schools in good faith and with the knowledge that graduates of the schools were being admitted to the examination. They corresponded with the Assistant Commissioner of the Department of Education, and in that correspondence there was no hint or suggestion that the schools that they were attending were not satisfactory. On graduation, they filed petitions to take the examination. The petitioners met the qualifications required at that time by the Board of Regents. They were, however, compelled to wait a long time before they were advised of the change of policy adopted by the regents; in fact, it was long after the beginning of the following school year. Even if we assume that the department is correct in stating that these students will be permitted to attend Columbia University and to take a year's course, it means that by reason of this change of policy these students will be delayed from taking the examination for a period of two years, a year lost in waiting for the determination and the additional year required in school. The action of the Board of Regents was retroactive. The Board of Regents changed the requirements several months after the petitions had been filed and after the scheduled date of the examination. The determination of the regents is discriminatory in that certain students from the same schools with the same qualifications were admitted to the examination. It must be borne in mind that if the relief requested by the petitioners is granted it does not admit the petitioners to the profession. They must satisfactorily pass the examination. The public, therefore, will be protected in that no one will be permitted to practice this profession without successfully passing the examination, which the court must certainly assume will be a fair test of the applicant's qualifications. If an applicant has complied with all the conditions necessary to the issuance of a license at the time of his application, it has been held that the licensing authority may not arbitrarily impose other and different conditions not theretofore existing. The action of the Board of Regents was to impose on these petitioners other and different conditions than pertained at the time of their application for permission to take the examination. The action of the Board of Regents in changing its policy was within the discretion of the Board of Regents and should not be disturbed so far as future applicants are concerned, but the action of the Board of Regents in refusing the petitioners permission to take the examination when they had qualified therefor under the standards existing at the time they filed for the examination, was arbitrary, capricious, discriminatory, and unfair. The court, therefore, ruled that the petitioners were entitled to take the examination in optometry. *Marks et al. v. Regents of University of New York et al., 106 N. Y. S. (2d) 306 (New York 1951).*

MEDICAL LITERATURE ABSTRACTS

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Intestinal Surgery in Infants and Children Simplified by Use of Multi-toothed Clamps. R. DeBord and W. J. Potts.—p. 373.

Results of Primary Inguinal Hernioplasty. L. T. Palumbo, R. E. Paul and F. B. Emery.—p. 384.

Feeding the Critically Ill.—A preliminary report is made on a four year study of the nutritional management of more than 500 critically ill patients. A new regimen has been developed, based on the newer knowledge of utilization of amino acids for protein metabolism. On this regimen amino acids and other nutrients in balanced solution are administered continuously at a constant rate through a small tube inserted into the gastrointestinal tract. The typical feeding formulas contain protein, carbohydrate, calcium, potassium, phosphorus, magnesium, sodium chloride, sodium lactate, and ethyl alcohol in measured amounts. The nutrient solutions are prepared in a sterile and stable form. They can be stored at ordinary temperatures for long periods without deterioration. In a group of 254 patients between the ages of seven months and 94 years who were fed by this regimen, the average duration of feeding was 15 days. The adult patients received an average of 2,500 cc. of formula daily containing from 125 to 200 gm. of protein and providing approximately 2,000 calories. One patient fed continuously for 214 days had a true weight gain of 32 lb. (14.5 kg.). Continuous drip feeding of partially hydrolized solutions appeared to meet the demands of continuous protein metabolism. This method of nutritional management has unusually broad applications, especially when prolonged feeding is required for institutional and home care of the critically ill.

Roentgen Ray Visualization of Intervertebral Disk.—A modified Lindblom's method of direct injection of radiopaque material into the intervertebral disk was used in 89 patients. Satisfactory diskograms were obtained following 186 injections of iodopyracet injection (diodrast®), while in 17 instances satisfactory roentgenograms were not obtained because of failure to introduce the needle into the disk, inability to inject the dye, or rapid disappearance of the injected dye. Thirteen of these failures were at the fifth lumbar interspace. Fifty-four disks that had been observed on satisfactory diskograms were explored in 48 patients. In 46 of these a diagnosis of posterior protrusion of mild to severe degree had been made from the roentgenograms. In 39 of the 46, a protrusion of sufficient degree to explain the patient's symptoms was found at surgical intervention. In two-thirds of these proved cases the patient's sciatic pain was reproduced by the injection, while in one-third the dye was seen to have escaped in the epidural space. Reproduction of sciatic pain during the injection should not be relied on unless protrusion of the disk is also apparent on roentgenograms. The presence of the dye in the epidural space is not pathognomonic of a tear of the posterior spinal ligament and is significant only when accompanied by roentgenographic evidence of protrusion. By the injection of iodopyracet it was possible in many cases to differentiate a normal disk, a degenerated disk, and a degenerated disk with posterior protrusion. The normal disk is usually characterized by a pooling of the contrast medium in the spaces above and below the intact nucleus, producing a bilocular shadow that is seldom seen with a protruded disk. In one of the 89 patients septic necrosis of the disk developed after injection of the contrast medium. Direct injection of the intervertebral disk does not require hospitalization, although in a few instances the sciatic pain reproduced by the injection was so severe that intravenous administration of thiopental (pentothal®) sodium was required to complete the injection. Increasing experience with this test should lead to greater accuracy in interpretation and a better understanding of the disk syndrome. This test provides direct visualization of the pathological process in contrast to the indirect evidence afforded by myelography. It is too early as yet to determine the relative accuracy and morbidity of these two procedures.

Alabama State Medical Assn. Journal, Montgomery

21:249-280 (March) 1952

Case of Pulmonary Hypertensive Pain or Hypercyanotic Angina. E. Balthrop.—p. 249.

Ruptured Uterus. E. G. Waldrop.—p. 251.

*Osteitis Pubis. W. M. Woodall Jr.—p. 258.

Osteitis Pubis.—Woodall calls attention to the more frequent recognition of osteitis pubis in recent years. It is most commonly seen following prostatectomy, but has also been reported in association with such conditions as difficult labor, trauma to the lower abdomen, herniorrhaphy, pyelonephritis, prostatic abscess, and genitourinary instrumentation. From 8 to 60 days after the operation or trauma, the patient suddenly complains of severe pain in the pubic area, with possible radiation to the inner thighs or groin or slightly upward on the abdomen. Point tenderness over the symphysis is exquisite, and a slight generalized enlargement or widening may be palpable. There is marked spasm of the adductor thigh muscles attached to the pubis, and any attempt to abduct or rotate the legs causes extreme accentuation of the pain. If the patient agrees to stand or walk at all, it is with great reluctance and the movements are quite guarded, slow, and painful. Coughing, sometimes micturition and defecation, or any movement or pressure in the pelvis, direct or indirect (as in standing or sitting), increases the pain in the pubic arch. The roentgenologic picture is that of acute bone atrophy, but usually this is evident only after the third week. It consists of an early fuzziness and fraying of the periosteum, then rarefaction with decalcification and separation of the symphysis (the process being at its maximum during the fourth to sixth week). Subsequently there may be simultaneous healing of rarefied bone with sclerosis while osteolysis is progressing elsewhere. The disease is self-limited, lasting from two to eight months. In view of this prognosis, treatment is directed chiefly toward relieving the pain and spasm. Two cases are presented. In the second cortisone and streptomycin in combination seemed to lessen the pain and shorten the course.

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Titles marked with an asterisk (*) are abstracted.

American J. Digestive Diseases, Fort Wayne, Ind.

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Modern Concepts of Physiopathology of Diabetes Mellitus. J. H. Barach.—p. 61.
Spontaneous Cholecystoduodenostomy: Report of Case of Long Standing. I. R. Jankelson and J. J. O'Conner.—p. 66.
Past and Present Concepts of Energy Metabolism and Obesity. M. A. Goldzieher and J. W. Goldzicher.—p. 69.
Serum Amylase in Peptic Ulcer. J. C. Hagan, A. M. Schoen and R. L. McGeachin.—p. 72.
Rupture of Esophagus Induced by Vomiting. A. R. Small and L. J. Boyd.—p. 73.
Solution for Parenteral Administration of Calcium. R. H. Hoffmann, E. M. Abrahamson and B. A. Josephson.—p. 79.
Pharmaco-Radiography of Stomach and Duodenum. G. Albot.—p. 82.

American Journal of Medicine, New York

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*Treatment of H. Influenzae Meningitis with Aureomycin and Chloramphenicol: Experience in 30 Consecutive Cases. E. B. Schoenbach, H. C. Spencer and J. Monnier.—p. 263.
*Diagnosis and Immediate Prognosis of Japanese B Encephalitis: Observations Based on More Than 200 Patients with Detailed Analysis of 65 Serologically Confirmed Cases. R. B. Dickerson, J. R. Newton and J. E. Hansen.—p. 277.
Aureomycin in Treatment of Systemic North American Blastomycosis. L. V. McVay Jr. and D. S. Carroll.—p. 289.
Tuberculous Pericarditis: Its Treatment with Streptomycin and Some Observations on Natural History of Disease. T. M. Myers and M. Hamburger.—p. 302.
Effects of Mercurial Diuresis in Patients with Ascites Due to Cirrhosis. J. G. Hilton.—p. 311.
Clinical Observations on New Oral Diuretic 1-Propyl-3-Ethyl-6-Aminouracil and Preliminary Studies on 1-Allyl-3-Ethyl-6-Aminouracil. A. Kattus, T. M. Arrington and E. V. Newman.—p. 319.

Antibiotic Treatment of H. Influenzae Meningitis.—Of 30 consecutive children between the ages of 3 and 51 months with bacteriologically confirmed meningitis due to Hemophilus influenzae type B, 18 were treated with aureomycin supplemented by sulfadiazine and 12 were treated with chloramphenicol. Fourteen in the aureomycin-treated group and five in the chloramphenicol group were less than 1 year old. Aureomycin was administered intravenously in a daily dosage of 8 to 40 mg. per kilogram of body weight. It was supplemented by aureomycin orally in daily doses of 40 to 60 mg. per kilogram of body weight in four to six divided doses for 14 days. An initial dose of 40 to 100 mg. of sulfadiazine per kilogram was administered intravenously, followed by 50 mg. per kilogram in 0.5% solution subcutaneously every eight hours for two to five days. Oral administration of sulfadiazine was instituted as soon as possible, and the patient received 150 to 300 mg. per kilogram daily for a total period of 21 days of sulfonamide therapy. Chloramphenicol was given for from two to three weeks. Oral dosage alone, 50 mg. per kilogram initially followed by 100 mg. per kilogram daily in four divided doses, was employed in six patients. Two patients received a dose of 10 mg. per kilogram in the form of a 25% solution of chloramphenicol in 50% dimethyl acetamide intravenously four times a day. This was followed by oral administration of the drug. Microcrystalline chloramphenicol suspended in isotonic sodium chloride solution was given intramuscularly to four patients in doses of 50 mg. per kilogram every 12 hours followed by chloramphenicol orally. Three of the 18 children treated with aureomycin and sulfadiazine died of their infection. Some residual neurological damage was observed in five of the surviving patients. No deaths occurred in the group treated with chloramphenicol, and only two patients showed residual neurological disturbances. The neurological complications had diminished several months later in four of the seven patients. No complications or residual damage were noted in the nine patients of both groups over 1 year of age who survived. Because of the difference in age distribution in the two groups, no distinction between the two types of treatment can be made. Chloramphenicol appeared to have certain advantages in treatment of these acutely ill children, many of whom were infants. No toxic manifestations that could be attributed to the medication were observed among any of the patients in this series. Subdural collections of fluid were often observed, and the importance of recognizing this complication is reemphasized.

Japanese B Encephalitis.—Of 299 American soldiers in Korea who had Japanese B encephalitis from July to October, 1950, 30 died and the remainder were evacuated to hospitals in Japan. Of 110 patients with similar clinical findings who were observed for an average of 10 weeks, subsequent serologic determinations yielded diagnostic complement fixation reactions in only 65. The findings in these groups were analyzed to determine the nature and course of Japanese B encephalitis, and to stress the factors that distinguish it as a clinical entity. These observations incompletely differentiate Japanese B encephalitis from other acute viral encephalitides, but they constitute a readily recognized "encephalitis syndrome." Characteristic of this syndrome were altered sensorium, mask-like facies, "thick" slow speech, coarse ocular tremor, relatively symmetric neurogenic paresis without corresponding sensory alterations or paralysis, and normal or increased deep tendon reflexes and/or abdominal reflexes, provided there was no profound depression of vital functions. The presence of four or more of these signs can probably be considered diagnostic of the Japanese B encephalitis syndrome. Of the 90% who survived in this series, 7% were mentally incapacitated at the end of three months. An additional 5% had partially disabling paralyses, usually originating in the lower motor neurons. Laboratory features not previously stressed are: spinal fluid pleocytosis persisting for more than seven weeks; polymorphonuclear cells in the spinal fluid in all patients examined during the first four days of the disease; regular elevation of the sedimentation rate with a mean of 35 mm. per hour (Wintrobe corrected), and slow development of specific complement-fixing antibodies so that diagnostic titers may not be reached for six weeks after onset. Despite lack of specific therapy for Japanese B encephalitis, the 10% mortality rate in the American soldiers was about one-third of that seen in the Japanese population. This difference was explained by the supportive care given the soldiers. Fluid replacement, gavage feeding, and vitamins were important. The most vital factor was maintenance of an adequate airway. This was often accomplished by proper positioning and use of a suction catheter. Convalescence was slow and prolonged hospitalization mandatory.

American Journal of Obstetrics & Gynecology, St. Louis

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*Endometriosis in Pregnancy, Clinical Observations. H. L. Gainey, J. E. Keeler and K. S. Nicolay.—p. 511.
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Use of Intra-Arterial Nitrogen Mustard Therapy in Treatment of Cervical and Vaginal Cancer. J. K. Cromer, J. C. Bateman, G. N. Berry and others.—p. 538.
*Efficacy of Rh Hapten Therapy in Prevention of Erythroblastosis. R. W. Marsters, R. T. F. Schmidt and M. E. Black.—p. 549.
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Evaluation of Surface Sponge Biopsy in Cancer Detection Clinic with Special Reference to Use of Endometrial Sponge Biopsy Forceps. B. Diamond, N. Mitchell and E. Blum.—p. 668.

Endometriosis in Pregnancy.—Of 38 pregnant patients with external endometriosis, the uterosacral ligament was involved in 20, the ovary in 2, uterosacral ligament and ovary in 14, and the rectovaginal pouch and cervix in 1 each. The effect of pregnancy on the lesions was recorded subjectively and objectively in 34. Postpartum examination of the 34 patients who went to term revealed objective improvement in 14 and no change in 20. Three patients, with ovarian, rectovaginal, and uterosacral ligament endometriosis, respectively, had almost total involution of what, prenatally, were extensive lesions. This effect of pregnancy persisted for eight months in the rectovaginal lesion and four years in the other two. Of 25 patients whose subjective complaints could be attributed to endometriosis, 20 noted improvement. It is impossible to attribute all of the benefits to the effect of pregnancy when the anatomic and functional changes that persist in the parous patient are considered. It is significant to note that the only two patients whose conditions were worse, subjectively or objectively, as a result of pregnancy had the rare complications of torsion of adnexa and ovarian pregnancy.

Rh Hapten Therapy to Prevent Erythroblastosis.—Rh hapten was employed in the treatment of 10 Rh-negative pregnant women who had given birth to at least one erythroblastotic infant. The existence of maternal immunization was corroborated by several Rh antibody titrations. Injections of Rh hapten were made intramuscularly into the gluteus maximus, and there were no discernible systemic reactions. Six received 100 mg. of Rh hapten per week, and four of these received 200 mg. each week near term. Three additional patients were given 200 mg. each week that was increased to 300 mg. at the 15th, 25th, and 30th weeks. Administration of 300 mg. was started in the seventh week in one patient but she aborted spontaneously in the 14th week. These weekly injections of Rh hapten caused no significant change in the apparent concentration of circulating Rh antibody. The patient whose pregnancy resulted in early spontaneous abortion and another who delivered a normal Rh-negative infant were eliminated in considering the results of treatment. In the remaining eight cases, there were five intrauterine deaths while a sixth infant was so severely affected that he died within a few minutes after birth. In the remaining two patients survival of the infants could possibly be ascribed to the administration of the sesame oil preparation of Rh hapten.

American Journal of Pathology, Ann Arbor, Mich.

*165:*171-318 (March-April) 1952

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Further Studies on Pathogenesis of Urate Calculi in Urinary Tract of White Rats. H. Ungar and R. Ungar.—p. 291.
The Spleen in Hypersplenism. R. J. Leffler.—p. 303.
*Lipid Deposition in Aortas in Younger Age Groups Following Cortisone and Adrenocorticotrophic Hormone. E. M. Etheridge and C. Hoch-Ligeti.—p. 315.

Lipid Deposition in Aortas of Young Persons Following Cortisone and Corticotropin Therapy.—An investigation of the changes in the aortas of patients who had received cortisone and/or corticotropin was stimulated by the finding of an excessively large amount of intimal lipid in the aorta of an 8-year-old child treated with cortisone. The adrenal cortex is known to affect cholesterol and other serum lipid levels, and a relationship between cholesterol metabolism and atherosclerosis is assumed. This study was restricted to patients under 21 years of age because lipid deposits of more than minimal degree are found in the aortic intima almost universally after the second decade. Thirty-four patients who had been treated with cortisone or corticotropin were studied at autopsy. Most of these patients had died of leukemia. Forty-three control cases were selected from patients who had received no cortisone or corticotropin; these patients had died of diverse causes, including 12 who died of leukemia. Deposition of lipid appeared to be increased in both the intima and media in patients under 11 years of age who received cortisone or corticotropin. After the age of 11, lipid was found so frequently in the controls that the difference in the two groups was equivocal. No correlation between the degree of change and the amount of hormone received was found, but there seemed to be some relation to the duration of treatment. There was no difference between the effects of cortisone and of corticotropin.

American Journal of Physiology, Baltimore

*168:*1-268 (Jan.) 1952. Partial Index

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Long-Term Observations of Hospitalized Paretic Patients. B. Dattner, D. M. Carmichael, L. DeMello and E. W. Thomas.—p. 179.
Five-Year Study of Antibiotics in Treatment of Granuloma Inguinale. R. B. Greenblatt, W. E. Barfield, R. B. Dienst and others.—p. 186.

Positive Tests for Syphilis in Collagen Diseases.—The records of 801 patients admitted to the Johns Hopkins Hospital between 1943 and 1950 with one of the "collagen diseases" (rheumatoid arthritis, rheumatic fever, disseminated lupus erythematosus, periarteritis nodosa, dermatomyositis, or scleroderma) were investigated to determine the incidence of positive serologic reactions for syphilis. Of 82 seropositive patients only 20 had proved syphilis. The incidence of positive serologic tests for syphilis was twice as great among patients with disseminated lupus erythematosus and periarteritis nodosa as among those with rheumatoid arthritis and rheumatic fever. In the lupus-periarteritis group combined, the incidence of proved syphilis was 5.0%; of possible biological false positive reactors, 13.9%. Comparable figures for the combined rheumatoid arthritis and rheumatic fever group are 1.9% and 6.5%. Thus in both groups, there were a number of seropositive patients in whom the existence of syphilitic infection could not be verified, and who are, at least on clinical grounds, possible biological false positive reactors. The fact that verification of the biological false positive status of most of the seropositive reactors in this and other reported series of cases of collagen disease has not been attempted by means of the treponemal immobilization test, impairs the validity of any conclusion. It can only be suggested that biological false positive reactions probably do occur frequently in patients with these diseases, especially in disseminated lupus erythematosus and periarteritis nodosa.

Antibiotics & Chemotherapy, Washington, D. C.

2:119-170 (March) 1952

*Terramycin in Treatment of Trichomonas Vaginalis Vaginitis: Report of 21 Cases. H. J. Greene.—p. 119.
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Alpha Streptococcus Meningitis: Report of Case Successfully Treated with Chloramphenicol. R. C. Hagan, J. E. Cohn and W C. Ebeling. —p. 147.
Mode of Action of Terramycin. Y. Miura, Y. Nakamura, H. Matsudaira and T. Komeiji.—p. 152.
Observations on Whooping Cough and Aureomycin Treatment. M. Hasselmann-Kahlert.—p. 159.

Terramycin in Trichomonas Vaginitis.—Twenty-one patients with Trichomonas vaginalis vaginitis were treated with terramycin vaginal suppositories. All patients had a profuse yellow-green, foamy, mucopurulent discharge from the vagina, and the clinical appearance of the vaginal and cervical mucosa was characteristic of the disorder. Each patient was instructed to empty her bladder before retiring at night and then to insert one terramycin vaginal suppository. No tampon was permitted, but a napkin was used at times to protect clothing. In order to prevent dilution of the medication, douching was not allowed. The melted debris of the suppository streamed out slowly in the erect position but gentle cleansing during voiding was sufficient to take up this discharge. Cotton cleansing, after voiding, was insisted upon. Coitus was interdicted. This routine was carried out for seven nights. If the menstrual period occurred, treatment was continued in the same manner. At the end of seven days, vaginal inspection generally revealed a clean pale pink vaginal mucosa after removal of residual melted suppository. The discharge had disappeared completely, and the cervix appeared normal. A vaginal smear was negative for Trichomonas vaginalis in each case. All the patients stated that they were completely free of the intolerable itching and discharge. Four patients complained of slight itching within one week after cessation of treatment. Examination revealed no recurrence, and the itching was relieved with a warm boric acid application.

Georgia Medical Association Journal, Atlanta

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Reducing Pain in Hemorrhoidectomy. H. E. Steadman.—p. 81.
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Incidence of Early Malignancy in Uterus Removed for Benign Conditions. O. S. Cofer and A. L. Evans.—p. 90.
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Iowa State Medical Society Journal, Des Moines

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Journal of Allergy, St. Louis

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*Cardiovascular Allergy Due to Penicillin, Sulfadiazine, and Bacterial Sensitization: Results of Treatment with Cortisone and ACTH. J. Harkavy.—p. 104.
Immunophysiology of Immune Reactions: Alteration in Thiocyanate Space in Quantitative Passive Transfer Experiments in Rabbits. J. K. Aikawa and E. L. Rhoades.—p. 123.
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Effect of Trypan Blue on Susceptibility to Histamine. G. L. Rohdenburg and L. Farmer.—p. 172.
Reactions Following Use of Terramycin Troches: Controlled Study. A. H. Kutscher, J. Budowsky, S. L. Lane and N. W. Chilton.—p. 177.
Rhinitis Medicamentosa. J. S. Walker.—p. 183.
Precision Scratching with Micro-Scratcher. I. R. Morrison.—p. 187.

Cortisone and Corticotropin in Cardiovascular Allergy.—Histories are presented of 4 atopic patients with hyperergic vascular disease characterized by extensive purpura, pulmonary infiltrations with eosinophilic myocarditis, hepatosplenomegaly and renal involvement. All of these patients had a history of vasomotor rhinitis, sinusitis and asthma. Because of the intercurrent respiratory infections they received antibiotic therapy consisting of injections of penicillin in varying amounts as well as sulfadiazine. Penicillin hypersensitiveness appeared to have been responsible for the clinical syndrome in the first two patients. Allergy to sulfadiazine and bacterial infection was regarded as the probable exciting factors in the vascular disease of the third patient, and bacterial infection was suspected in the fourth. Concurrent sensitivity to other antibiotics such as aureomycin and chloramphenicol may have acted synergistically to accentuate the morbid process in all four patients. Cortisone and corticotropin proved effective in controlling the reversible phases of the disease, such as eosinophilic pulmonary infiltrations, purpura, joint pains and fever but failed to prevent the progress of the basic hyperergic vascular disease affecting the myocardium and the kidneys. The lesions of these organs became irreversible and three of the patients died. Autopsy findings in one patient are described.

Journal of Thoracic Surgery, St. Louis

23:219-326 (March) 1952

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Arteriovenous Fistula of Aortic Arch. W. W. McCook.—p. 299.
*Experimental Evaluation of Catgut as Vascular Suture Material and Report on Its Clinical Use. R. A. Deterling Jr., C. C. Coleman Jr., J. Kee and G. H. Humphreys II.—p. 303.

Catgut as Vascular Suture Material.—Fine sizes of braided silk and medium chromic catgut were used to implant vascular grafts into 20 dogs. By using both suture materials in the same animal, a comparative study was possible. The anastomoses were examined after 1 to 168 days. Grossly, the chromic catgut began to fragment in about four weeks. At times the fibrosis at the silk suture line seemed greater than that with catgut. Occlusion of some of the grafts by thrombosis was believed to be related to the use of homografts in these dogs rather than to the type of suture material. Microscopically, the early cellular reaction about the catgut was greater than that about silk in some specimens. In others, comparable but varying degrees of reaction were found about both types of suture. After a few weeks, excellent fibrous union occurred in all instances. Residual fragments of catgut were observed for several months. Occasionally, granuloma formation was noted about the silk strands. Medium chromic catgut was used for interrupted sutures in three children. In two of them, aged 21 months and 5½ years, a coarctation was excised and end-to-end aortic anastomosis carried out. In the other, aged 4 years, a splenorenal shunt was performed. The clinical result in all three has been satisfactory to date.

Journal of Urology, Baltimore

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*Osteitis Pubis Treated with Adrenocorticotrophic Hormone. V. F. Marshall, W. F. Whitmore Jr., A. T. Petro and others.—p. 364.
Lesions of Ischium and Pubis in Pregnancy Resembling Osteitis. A. Golden.—p. 370.
Aureomycin in Urinary Tract Infection. W. I. Metzger, L. T. Wright, F. R. DeLuca, and others.—p. 374.
Use of Helium in Perirenal Insufflation: Preliminary Reports. B. Levine. —p. 390.
Use of Carbonated Beverage as Aid in Pediatric Excretory Urography. O. C. Berg and D. H. Allen.—p. 393.

Carcinoma of Penis.—Harlin discusses penile cancer on the basis of published reports and of 21 cases observed at a Veterans Administration Hospital during a 10 year period. Penile cancer constitutes from 1 to 3% of all carcinomas in men. Although the etiology is obscure, hard, retained, inspissated smegma causes irritation and predisposes to development of penile cancer. Jews and Mohammedans who undergo ritualistic circumcision in infancy or childhood have complete or relative protection from penile cancer, which occurs almost exclusively in the uncircumcised, particularly in those with phimosis, and occasionally in those circumcised in adult life. Two types of carcinoma of the penis are described, the papillary and the infiltrating. Treatments include surgery, electrosurgery, deep x-ray and radium therapy and combinations of these treatments. Harlin favors the conservative surgical approach, the principles of which are as follows: (1) simple amputation approximately 1.5 cm. to 2.5 cm. proximal to any visible or palpable evidence of disease; (2) use of a perineal urethral opening only in instances where soilage by urine would otherwise occur (as with a short residual stump or in obese persons); (3) groin dissection in patients with adenopathy due to metastases, after the primary tumor has been treated. Three of the aforementioned 21 patients had metastases when the disease was first diagnosed. One of these who had simple amputation with bilateral groin dissection was alive 3½ years later. The other two died of generalized metastases two and four years, respectively, after radical penile amputation, bilateral groin dissection, and postoperative radiation. Two of the 18 who had no evidence of metastases when the primary tumor was diagnosed died. One died of hypertensive cardiorenal disease eight years following simple amputation. There was no evidence of cancer at death. The other patient died three days after total amputation in uremia secondary to receipt of incompatible blood. Only one of the 16 surviving patients has evidence of penile carcinoma.

Corticotropin in Treatment of Osteitis Pubis.—Most cases of osteitis pubis, one type of inflammation of the periosteum, bone, cartilage and ligamentous structures of the anterior half of the pelvic girdle, have followed a suprapubic operation on the bladder or prostate, but the disease has been observed following nonoperative disorders, such as pyelonephritis. The clinical and radiographic manifestations usually appear in two to six weeks. The process typically begins at the symphysis and tends to involve the ischii. Roentgenographically a motheaten bony destruction, apparently beginning at the symphysis, is characteristic in association with evidence of periosteal reaction (spurs and osteophytes) and widening of the cartilagenous space. In severe cases the patient is incapacitated with pain for many weeks or months. However, the disease is essentially self-limited. Therapeutic efforts have usually produced equivocal results. Marshall and associates employed corticotropin (ACTH) because of the clinical similarity of the manifestations in one case to those of an acutely inflamed rheumatic joint. They feel that the dramatically prompt effect obtained in two cases must be attributed to the adrenocorticotropic hormone. The clinical relief appears to persist after discontinuance of hormonal therapy, as if the process had been abruptly reversed into the healing phase, a sort of premature cure of a self-limited disease. In the one chronic and complicated case a limited benefit seems to have been obtained. Further studies, including longer follow-up of these cases, may reveal unknown limitations of this therapy.

Kansas Medical Society Journal, Topeka

53:105-164 (March) 1952

Working Program for Care and Treatment of the Hypertensive Patient. E. G. Dimond.—p. 105.
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Method for Rectal Use of Nisulfazole in Chronic Ulcerative Colitis. W. R. Durkee.—p. 127.
Hemorrhagic Transfusion Reactions. C. H. McCroskey and S. R. Friesen.—p. 129.

Maine Medical Association Journal, Portland

43:65-100 (March) 1952

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Maryland State Medical Journal, Baltimore

1:49-120 (Feb.) 1952

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Problems Presented to the Youth of the Community by Traffic in Drugs. R. C. Thomsen.—p. 87.
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1:121-174 (March) 1952

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New England Journal of Medicine, Boston

246:317-354 (Feb. 28) 1952

*Surgical Significance of Duodenal Diverticula. R. B. Cattell and T. J. Mudge.—p. 317.
Unusual Case of Lower-Nephron Nephrosis Following Exposure to Carbon Tetrachloride. R. C. Partenheimer, W. J. Boyer and D. S. Citron.—p. 325.
Tuberculosis Localized in Vermiform Appendix. H. Morrison, C. G. Mixter, M. J. Schlesinger and W. B. Ober.—p. 329.
Coronary Thrombosis in Diabetes Mellitus: Analysis of 54 Cases. J. W. Robinson.—p. 352.
Trauma of Athletics. A. Thorndike.—p. 335.
New Vein Stripper. H. Mahorner.—p. 340.

Surgical Significance of Duodenal Diverticula.—In an effort to evaluate surgical treatment of duodenal diverticula, Cattell and Mudge reviewed the cases of 25 patients who were subjected to operation at the Lahey Clinic in the last 10 years. At this clinic the diagnosis of duodenal diverticulum is made about 150 times a year, but in only about 20 of these is the diverticulum considered a possible source of the patient's symptoms, and only 2 or 3 of these 20 are surgically treated. In cases in which other pathological changes are present, the decision to remove the diverticulum is deferred until the time of surgery. Then, after removal of the gallbladder, exploration of the common bile duct, or whatever the primary procedure is, the diverticulum is dissected free, and its size, shape and location and the presence of inflammation or retained food are ascertained before the final decision is made. It may be decided not to remove the sac. In six cases the diverticula were intimately associated with the pancreas, and in three of these were actually embedded. Damage to the pancreas is difficult to avoid in dissection of these diverticula. The two deaths in this series both resulted from pancreatic enzyme leakage. Fifteen of the 25 patients were entirely relieved of their symptoms. Four showed some improvement but were not completely cured. Six patients, including the two who died, had return of symptoms and are classified as failures. In only 17 of the 25 cases can the results be considered to be purely on the basis of diverticulum removal. The results in these 17 were excellent in 9, fair in 3, and poor in 5. A number of case histories are presented, and the authors stress that surgical intervention should be carried out only after a careful study and a trial of medical treatment. The removal of duodenal diverticula is indicated in less than 5% of those discovered.

246:355-390 (March 6) 1952

Epidemic-Typhus Antibodies in Human Subjects in Boston, Massachusetts. E. S. Murray, S. Cohen, J. Jampol and others.—p. 355.
*Elastic Stockings in Prevention of Pulmonary Embolism: Preliminary Report. R. W. Wilkins, G. Mixter Jr., J. R. Stanton and J. Litter.—p. 360.
Stress Incontinence Treated by Vesicourethropexy. L. H. Doolittle.—p. 364.
*Industrial Dermatitis Due to Contact with Brass. G. E. Morris.—p. 366.
Diseases of Thyroid Gland (Part I). O. Cope.—p. 368.

Elastic Stockings to Prevent Pulmonary Embolism.—External pressure of 10 to 15 mm. Hg applied to the leg of a supine person decreases the volume of the limb, presumably by reducing the volume of the veins. The velocity of blood flow in the veins during such local compression is accelerated, because the mean linear velocity of blood flow is inversely proportional to the cross-sectional area. Because of the belief that acceleration of flow would decrease the likelihood of thrombosis in the calf veins, it was decided to try compression of the legs with elastic stockings as a prophylactic measure against phlebothrombosis and pulmonary embolism in hospitalized persons. It was hoped that even if elastic compression did not completely prevent phlebothrombosis, it might cause the thrombi that did form to be smaller and hence less likely to cause fatal pulmonary embolism. An alternate case study of hospitalized patients was instituted. Elastic stockings were chosen rather than elastic leg bandages, because the former were more easily and uniformly applied at correct pressures. Early in the study pulmonary edema developed in one patient with severe congestive heart failure, renal insufficiency, and peripheral edema soon after application of elastic stockings, and such patients were thereafter excluded from the study. The presence of ulceration or inflammatory lesions on the leg, arterial insufficiency, the presence of casts or elastic bandages, or, a patient's refusal to cooperate were contraindications to the elastic stocking experiment. Among the 2,346 patients who wore the stockings, there were no deaths from pulmonary embolism although there were two cases of nonfatal pulmonary embolism. Among 2,395 control patients there were 4 deaths from pulmonary embolism, and 12 cases of nonfatal pulmonary embolism. Wearing elastic stockings does no harm if they are applied loosely (at 10 to 15 mm. Hg pressure) and smoothly, and if they are omitted when contraindicated. Further investigation of this method for the prophylaxis of pulmonary embolism seems warranted.

Dermatitis Due to Contact with Brass.—Morris reports on five patients with contact dermatitis from brass. One patient had dismantled brass electrical fixtures. A rash had appeared on the right foot and had subsequently spread to both feet and both hands. Both palms and wrists were red and scaling and showed dried desquamating patches. Both soles were red and showed extensive vesiculation, with swelling and edema. Tests with the shoe leathers and linings were negative and scrapings were negative for fungi. Patch-tests with the brass parts with which the patient worked produced positive reactions. The small washers had continually fallen into her shoes and had started the rash on her soles. After she was treated with cold compresses and soaks and removed from contact with brass, the condition slowly improved and cleared completely after about three months. Chemical analysis of the brass showed about 20% zinc, 70% copper, 1% tin, 2% iron, 1% chrome and 3% lead, with traces of manganese, nickel and silver. Skin tests with brass six months later were still positive. After presenting brief histories of four other patients, Morris points out that brass is well known as a cause of metal fume fever, and he feels that dermatologists should consider it as a possible cause of some unusual dermatoses.

New York State Journal of Medicine, New York

52:513-640 (March 1) 1952

*Radiophosphorus (P^{32}) in Diagnosis and Treatment. B. J. Duffy Jr. and J. W. Howland.—p. 551.
Maintenance Mercuhydrin Therapy in Prevention of Pulmonary Edema Associated with Hypertensive and Arteriosclerotic Heart Disease. M. L. Gelfand.—p. 555.
Fatal Gastrointestinal Hemorrhage: Analysis of 44 Cases. J. P. West and C. S. Oakman.—p. 558.
Prolapse of Gastric Mucosa: Clinical and Radiologic Entity. F. Elias and S. A. Kornblum.—p. 561.
Importance of Adequate Excision of All Incompetent Perforator Vessels in Surgical Treatment of Varicose Veins: Use of New Marking Ink to Delineate Varices. R. A. Nabatoff.—p. 563.
Physiologic Principles in Surgical Management of Peptic Ulcer. C. J. Jones.—p. 566.
Furacin Soluble Dressing in Treatment of Ingrown Toenails. L. Wirth.—p. 568.
Some Biologic Considerations in Treatment of Breast Carcinoma. M. M. Black and F. D. Speer.—p. 569.
Clinical Evaluation of Methylparafynol as Soporific Agent. J. Chevalley, N. Heminway, G. Meyer and others.—p. 572.
*Tetraethylammonium Chloride in Treatment of Coronary Artery Disease. I. Hirshleifer, G. Schwartz, H. J. Fuerst and A. Fankhauser.—p. 575.
Pyribenzamine in Treatment of Nonspecific Upper Respiratory Infections. G. A. Cronk and F. N. Marty.—p. 579.
Some Clinical Aspects of Digitalis Intoxication. L. J. Giuffra and Hsiang Len Tseng.—p. 581.

Radiophosphorus (P^{32}) in Diagnosis and Treatment.—Duffy and Howland feel that the potential utility of radiophosphorus and other radioisotopes in diagnosis and treatment can be only partially assessed at this time. Radiophosphorus (P^{32}) has a half-life of 14.3 days, which allows for shipment, standardization, and preparation of doses without prohibitive loss of material. P^{32}, unlike the gamma-emitting I^{131}, emits only beta rays, which have a very short range (from 3 to 4 mm.) in tissue. It is received as a solution of disodium hydrogen phosphate or phosphoric acid with a specific activity of 5 to 7 mc. per cubic centimeter. The amount of radiation from 1 mc. of P^{32} in an adult weighing 70 kg. is proportional to the dosage of external radiation that is given in the treatment of blood diseases. Following either oral or intravenous administration, P^{32} initially localizes in erythrocytes, with an increasing concentration in leukocytes after 48 hours. This is most marked in leukemic blood, with P^{32} concentration in leukocytes four to five times as great as in erythrocytes one week after administration. There have been scattered reports of patients with lymphosarcoma, multiple myeloma, occasional carcinomas, and even rheumatoid arthritis being benefited by P^{32} treatment. These results are inconstant, usually evanescent, and duplicated by similar reports with other chemotherapeutic agents. Polycythemia vera and chronic leukemia are the two conditions in which P^{32} treatment may be definitely indicated. The uptake of P^{32} by neoplastic tissue can also be utilized for the diagnosis of cancer. Investigations on the diagnostic use have been interesting but of limited clinical application. Most of the work with P^{32} has been in the field of basic scientific investigation. Some of these observations may well be developed into practical clinical procedures, but it seems most likely that P^{32} will continue to serve primarily as a research tool.

Tetraethylammonium Chloride in Coronary Artery Disease.—The possibilities of using tetraethylammonium chloride in treatment of vasospastic diseases have been studied by a number of investigators since 1945. The authors of this report used this drug in 23 patients with severe coronary insufficiency with and without myocardial infarction and in a few cases of intractable pain of acute myocardial infarction. The intramuscular route of administration is preferable to the intravenous route. The initial dose of 300 to 500 mg. was given daily for three days, and after that the dosage was individualized, depending on the relief of symptoms, amount of fall in blood pressure, and untoward side effects. No severe secondary effects were observed. Efforts were made to establish a maintenance dose on a weekly or biweekly basis. In most cases this was accomplished with the dosage ranging between 200 and 900 mg. per week. All patients experienced relief of pain, as judged by a decrease in the number and severity of attacks and also by an increase in work capacity. The drug is suggested for relief of severe pain of acute myocardial infarction. Four cases are discussed in which electrocardiograms represent the various types of cases. The breaking of a reflex arc at the autonomic ganglia and the response of sympathetically denervated structures to small doses of circulating epinephrine are suggested as factors in the action of the drug. The authors feel that tetraethylammonium chloride has a place in the treatment of the pain of coronary artery disease, especially in patients who have failed to respond to the usual measures.

52:641-784 (March 15) 1952

Incidence of Benign and Malignant Disease of Female Pelvic Organs. C. T. Javert, E. E. Kramer and F. A. Macdonald.—p. 701.
*Herpes Zoster: Its Treatment with Protamide. F. C. Combes and O. Canizares.—p. 706.
Observations on Eosinophil Count. M. H. Robbins, E. C. Klein and L. Geller.—p. 709.
Massive Hemorrhage from Peptic Ulcer. H. L. Skinner and L. S. Rolufs.—p. 713.
Some Problem of Traumatic Causal Relationship in Development of Lumbar Disk Hernia. J. H. Siris.—p. 717.
Prevention of Miscarriage. C. H. Birnberg, D. A. Sherber and S. H. Livingston.—p. 720.
Paroxysmal Auricular Tachycardia. M. H. Morris.—p. 723.
Toxic Results of Anticoagulant Therapy. H. Berman and F. S. Mainella.—p. 725.
Dramamine Preanesthetic Medication. B. W. Zoffer and P. H. Sechzer.—p. 728.
Management of Varicose Veins and Their Related Problems During Pregnancy. L. K. Stalker.—p. 729.
Prevention and Management of Congenital Syphilis in New York City. H. M. Wallace, A. Jacoby and E. M. Gold.—p. 731.

Herpes Zoster.—Protamide, a denaturated, proteolytic enzyme obtained from the mucosal layer of hog stomach, was used in treatment of 30 men and 20 women with active herpes zoster. Protamide was administered intramuscularly as a sterile, colloidal solution, the intervals between injections varying from six hours to two or three days. This routine was determined largely by the degree of clinical response and relief of pain. The total doses varied from 1.3 to 24 cc. Results were excellent in 29 of the 50 patients treated, satisfactory in 11, and unsatisfactory in the remaining 10. Improvement in the patients with favorable responses was almost immediate. The average number of injections required in the group with excellent results was 3.4, and in the group with satisfactory results 5.9. The disease was unusually severe in almost all of the patients with unsatisfactory results, but in some of them brief periods of relief from pain followed each injection and occasionally persisted for several hours. There were no untoward reactions or evidence of toxicity.

Ohio State Medical Journal, Columbus

48:193-288 (March) 1952

Verification Test for Pseudosyphilitic Reactions. H. Hecht.—p. 213.
Report of Two Cases of Late Abdominal Pregnancy. J. C. Jarrett.—p. 219.
Congenital Cleft of Palate. B. C. Martin and J. C. Trabue.—p. 222.
Lithopedion Pregnancy. J. H. McClure and J. W. W. Epperson.—p. 225.
*Training in Resuscitation of Heart. R. M. Hosler.—p. 228.
Relationship of Proved Histoplasmosis to Histoplasmin Skin Sensitivity in Ohio. S. Saslaw and J. A. Prior.—p. 229.
Obstructive Uropathy as Cause of Hypertension (Case Report). G. C. Poore.—p. 232.

48:289-392 (April) 1952

The Eye in Diagnosis of General Diseases. L. V. Kogut.—p. 305.
Chronic Bronchitis and Acute Bronchiolitis in Adults. J. A. Prior.—p. 310.
Census of Hospitalized Polio Patients, August 1951; Summary and Interpretation. National Foundation for Infantile Paralysis.—p. 315.
Acute Immunopancytopenia with Interesting Complications. G. S. Belaval.—p. 318.
Surgical Treatment of Elephantiasis of Leg: Report of Case. J. J. Longacre and W. T. Swartz.—p. 324.

Training in Resuscitation of the Heart.—Hosler describes a practical two day training course in emergency treatment of cardiac arrest during a surgical procedure. Since enrollment is limited, personal instruction is possible. The resuscitation procedure is separated into two distinct steps, namely, (1) reestablishment of the oxygen system, and (2) restoration of the heart beat. A definite plan is necessary if the surgeon is to succeed with resuscitation. The course stresses the things to do and not to do during the critical moments. It focuses attention on the oxygen system and not on the heart beat. In the first animal experiment the heart is permitted to stop in standstill, or asystole, by a breakdown of the oxygen system for a period longer than the safe time limit, thought to be three to five minutes. In the second experiment, the heart is placed into ventricular fibrillation by an electrical shock. With counter shock equipment the heart is restored to normal rhythm. These are the two conditions with which the surgeon is confronted during cardiac arrest. The animals are observed and examined on the following day. At the final session the members practice cardiac massage. The methods of massage are carried out in such a way that each member can observe his own technique as he watches a continuous writing and recording of the effective blood pressure that he is sustaining.

Pediatrics, Springfield, Ill.

9:263-386 (March) 1952

*Disorders of Glycogen Metabolism, with Special Reference to Glycogen Storage Disease and Galactosemia. W. H. Langewisch and J. A. Bigler.—p. 263.
*Use of BCG Vaccine in New Diagnostic Test for Tuberculosis. E. Friedman and I. Silverman.—p. 280.
Chronic Hemolytic Anemia in White Child Due to Thalassemia and Sicklemia, with Genealogic Survey. C. F. Wasserman, V. R. Phelps and A. J. Hertzog.—p. 286.
Exogenous Hemochromatosis in Mediterranean Anemia. A. M. Frumin, S. Waldman and P. Morris.—p. 290.
Osteoid Osteoma in Childhood. H. M. Purcell, S. D. Mills and P. R. Lipscomb.—p. 295.
Chemical Comparison of Normal Meconium and Meconium from Patient with Meconium Ileus. D. J. Buchanan and S. Rapoport.—p. 304.
Gastrointestinal Allergy in Infancy: Significance of Eosinophiles in Stools. A. H. Rosenblum and P. Rosenblum.—p. 311.
Susceptibility of Hemophilus Parapertussis to Certain Antibiotics. E. Day and W. L. Bradford.—p. 320.
Coagulation Studies in Newborn Infant: II. Erythroblastosis Fetalis. R. M. Heyn, I. H. Rozenfeld, B. J. Grossman and J. D. Stuart.—p. 327.

Disorders of Glycogen Metabolism.—Five patients between the ages of 7 weeks and 19 months with disorders of glycogen metabolism are reported on. Two had glycogen storage disease of the liver, two had glycogen storage disease of the heart, and one had galactosemia. Clinical and laboratory evidence of the hepatic type of glycogen storage disease consisted of pronounced hepatomegaly, rapid development of hypoglycemia and ketonuria when food was withheld, and failure of the blood sugar level to respond to subcutaneously injected epinephrine. The presence of abnormally large amounts of glycogen in the liver was confirmed by biopsy in one of these two patients. Treatment of one of these patients with corticotropin (ACTH) resulted in disappearance of hypoglycemia and acetonuria during the therapy. In the two patients with glycogen disease of the heart, the heart was enormously enlarged. This type of disorder is invariably fatal, and both of the authors' patients died. Necropsy revealed large amounts of glycogen in the heart, liver, and kidneys. The electrocardiogram taken in one of the two patients revealed combined heart strain accompanied by inversion of the T waves and an abnormally depressed S-T segment in all limb leads. The infant with galactosemia (galactose diabetes) had massive hepatomegaly and protuberant abdomen. Albuminuria and melituria were confirmed by repeated urinalyses. Bilateral nuclear cataracts were noted. The urinary sugar was nonfermentable and definitely galactose. The glucose tolerance curve was high and prolonged due to high blood galactose levels. Continuous weight gain and excellent general condition with some decrease in the size of the cataracts followed use of a hypoallergenic (lactose-free) formula (nutramigen®). Although the pathological manifestations of the five patients differed, they had one common condition; they all had evidence of inborn defective glycogen metabolism. The exact pathogenesis of this condition is still in doubt. Presumably there is a defect in the enzymatic conversion of glucose or galactose to glycogen and its subsequent reversion back to glucose. Different enzyme systems seem to be involved in each entity.

BCG Vaccine in New Test for Tuberculosis.—Mantoux tests were done on 91 children between the ages of 4 and 12 years using old tuberculin in a dilution of 1:10,000 (0.01 mg.). Negative reactors were retested with a 1:100 (1.0 mg.) solution of old tuberculin. All the children were then tested by making two punctures through a drop of BCG vaccine applied to the arm. The 39 Mantoux-positive children developed papules during the first six days after inoculation with BCG. The 46 tuberculin-negative children gave a late reaction to BCG in 12 to 20 days, similar to that seen in uninfected persons who are BCG-vaccinated according to the method of Rosenthal or Birkhaug. Eight children gave no reaction to BCG, possibly because of poor technique of vaccination. In four children false positive reactions were elicited with old tuberculin. These were easily differentiated by demonstration of a late reaction with the BCG test. Thirty-four of the negative reactors to both the BCG and Mantoux tests were retested one year later and remained negative to both tests, indicating that the amount of BCG used in doing the test is usually not sufficient to convert a negative reactor into a positive one. The number of children studied is too small to justify any final conclusions about the role of BCG in routine tuberculin testing, but the authors feel that their findings together with those of other investigators indicate that BCG vaccine is a more sensitive and more specific test than the ordinary tuberculin test. The BCG test therefore should be of value when the authenticity of a "positive tuberculin test" is doubted; in cases of tuberculin anergy in which clinical evidence seems to indicate tuberculous infection despite a negative tuberculin test; to detect "infratuberculin allergy," i. e., early reaction to BCG in persons negative to tuberculin, when BCG vaccination is contemplated. Further research is necessary to determine whether BCG vaccination is necessary in the presence of infratuberculin allergy.

Pennsylvania Medical Journal, Harrisburg

55:193-288 (March) 1952

Toxemias of Pregnancy. R. G. Douglas, R. Landesman, R. W. Bonsnes and F. MacDonald.—p. 217.
Demonstration and Significance of Pedicle in Roentgen Diagnosis of Polypoid Tumors of Alimentary Tract. B. R. Young and R. L. Scanlan. —p. 225.
Occlusive Arterial Disease of Extremities. S. Lisker.—p. 227.
Plasma Substitutes and Their Uses. R. L. Patterson.—p. 231.
Report on Hearing Survey in Public Schools of Pennsylvania. J. E. Landis.—p. 233.
Use of Cortisone and ACTH in Eye Diseases. H. E. Thorpe.—p. 236.
Service or Servitude—Which Shall It Be? F. F. Borzell.—p. 241.

Plastic and Reconstructive Surgery, Baltimore

9:173-290 (March) 1952

Cross-Leg Flap Procedure. R. B. Stark.—p. 173.
*Cross-Finger Flaps in Treatment of Injuries to Finger Tip. M. N. Tempest.—p. 205.
Mass Treatment of Burns in Atomic Warfare. A. J. McDowell.—p. 223.
Congenital Dermoid Cysts of Nose. J. K. Crawford and J. P. Webster. —p. 235.
Cortisone Therapy in Dupuytren's Contracture. H. Baxter, C. Schiller, L. H. Johnson and others.—p. 261.
Toe to Finger Transplant—Final Result. L. T. Byars.—p. 274.
Internal Wire-Pin Fixation for Fractures of Upper Jaw, Orbit, Zygoma and Severe Facial Crushes. J. B. Brown, M. P. Fryer and F. McDowell. —p. 276.

Cross-Finger Flaps for Injuries to the Finger Tip.—In injuries involving loss of skin over the finger tips, resurfacing the defects with fresh skin is rarely considered, although many are suitable for immediate skin grafting. Often the wound is merely covered with a simple dressing and allowed to heal slowly by granulation, although good skin cover is essential in order to avoid chronic infection and painful finger stumps. Superficial loss of skin over the pulp should generally be treated by free split skin grafts. However, if there is great loss of substance of the pulp, and whenever bone is exposed, full thickness replacement is preferable. Local hand skin should be used wherever possible because even that on the dorsum of the fingers is much stronger than that found in the usual donor sites such as the arm, abdomen, and thigh. Tempest describes his method of repairing finger tip injuries by means of the cross-finger flap. It is suitable for all finger tip injuries in which bone has been exposed, whether it be a clean cut guillotine amputation, or an oblique wound opening up the distal interphalangeal joint. The operation is performed in two stages. A flap is fashioned from skin on the dorsal surface of an adjacent finger. The proposed flap should not encroach on to the volar aspect, because there is danger of injury to the digital neurovascular bundle and of producing a tender scar on the volar aspect of the donor finger. The flap is made approximately one-fourth larger than the defect. The flap may be based proximally, distally, or hinged longitudinally. A small Thiersch graft is cut from the same forearm and sutured onto the raw area on the donor finger. A pressure dressing is applied over this graft. The free margin of the finger flap is then accurately sutured over the tip of the damaged finger using interrupted black silk sutures. An interval of two weeks between operations is adequate, and in several cases the second stage has been quite safely performed after only 10 days. The flap is separated and finally implanted into the tip of the injured finger. Light work can often be resumed three weeks later. The donor area heals rapidly. This report is based on 24 cases in which the cross-finger flap proved useful in repair of injuries of the finger tip. A brief outline is given of its applications in repair of other lesions in the hand.

Proc. Staff Meet. Mayo Clinic, Rochester, Minn.

27:105-120 (March 12) 1952

Unusual Tumor of Parotid Gland: Report of Case. N. J. Bellegie and E. S. Judd Jr.—p. 105.
*Treatment of Acute Painful Phantom Limb. L. C. Kolb, L. M. Frank and E. J. Watson.—p. 110.
Neurofibroma of Trigeminal Nerve Root in Posterior Fossa: Total Removal by Transtentorial Approach: Report of Case. G. S. Baker and A. A. Bailey.—p. 118.

Treatment of Phantom Limb.—Kolb and associates show, in two case histories, that in certain cases of acute postoperative painful phantom phenomenon, brief psychotherapy may be effectively applied to relieve the painful symptom and associated panic. In both patients the importance of a sound and physically powerful body had been overemphasized through the athletic interests and physical prowess of their fathers. The first case report demonstrates superstitious, terrifying rationalizations to explain the existence of the phantom limb. Such rationalizations are usually concerned with the loss and the fantasied disposal of the amputated part. In the brief psychotherapy the authors considered in order: (1) the patient's concept of the phantom phenomenon and any attendant rationalization he may have regarding its occurrence; (2) his wishes and fears in regard to disposal of the amputated part; and (3) the significance of his present and past attitudes toward his body in his real and fantasied experiences with persons significant to him, such as parents, family, and associates. Experiences on the part of these authors also suggest that proper preparation of the patient who is to undergo amputation might prevent in some instances the development of the painful phantom hallucination. Such preparation should include a discussion of the occurrence of the phantom phenomenon and inquiry as to the patient's wishes and fear in regard to disposal of the part to be amputated.

Quarterly J. Studies Alcohol, New Haven, Conn.

13:1-188 (March) 1952

Evaluation of Antidotes for Alcohol Reaction Syndrome in Patients Treated with Disulfiram (Tetraethylthiuram Disulfide). D. Lester, E. J. Conway and N. M. Mann.—p. 1.

Electroencephalographic Studies in Alcoholism. S. C. Little and M. McAvoy.—p. 9.

Deaths of Alcoholic Patients Treated with Disulfiram (Tetraethylthiuram Disulfide) in Denmark. E. Jacobsen.—p. 16.

Use of Wine and Other Alcoholic Beverages by Group of Italians and Americans of Italian Extraction. G. Lolli, E. Serianni, F. Banissoni and others.—p. 27.

Rates of Alcoholism in the United States of America, 1940-1948. E. M. Jellinek and M. Keller.—p. 49.

Use of Hospital Facility in Conjunction with Outpatient Clinics in Treatment of Alcoholics. E. P. Walcott and R. Straus.—p. 60.

Study of Use of Alcoholic Beverages Among High-School Students in Utah. A. D. Slater.—p. 78.

Studies of Drinking in Jewish Culture: III. Drinking Patterns of Children and Adolescents Attending Religious Schools. R. H. Landman.—p. 87.

Group Therapy in Alcoholism: Transcriptions of Series of Sessions Recorded in Outpatient Clinic. R. G. McCarthy.—p. 95.

Radiology, Syracuse, N. Y.

58:325-480 (March) 1952

Urologic Problems in Pediatric X-Ray Diagnosis. F. N. Silverman.—p. 325.

Clinical Experience with Irradiation Through a Grid. H. Marks.—p. 338.

Recent Clinical Experience with Grid in X-Ray Treatment of Advanced Cancer: Preliminary Report. W. Harris.—p. 343.

Depth Dose Curves for Grids in X-Ray Therapy. R. Loevinger.—p. 351.

Comparison of Dose Distributions in Patients Treated with X-Ray Beams of Widely Different Energies. H. Garrison, J. Anderson, J. S. Laughlin and R. A. Harvey.—p. 361.

*Radiation Hazards to the Embryo and Fetus. L. B. Russell and W. L. Russell.—p. 369.

Goitre Plongeant (Plunging Goiter) Associated with Pharyngo-Esophageal Diverticulum: Report of Case. M. Slobodkin.—p. 378.

Protective Effect of Small Lead Shields During Repeated Whole-Body X-Ray Irradiation of Rats. J. Gershon-Cohen, M. B. Hermel and J. Q. Griffith Jr.—p. 383.

Effective Thyroid Depth and Compensating Measurements for Iodine Uptake Determination A. F. Reid and J. A. Sorenson.—p. 390.

Air-Contrast Study of Duodenal Bulb: Its Importance in Diagnosis of Duodenal Ulcer. R. R. Meyer.—p. 393.

Gallstone Impacted in Duodenal Cap. J. F. Riesser and B. Vicas.—p. 401.

Rhinolith. R. J. Terrafranca and A. Zellis.—p. 405.

Encapsulated Pleural Effusion Simulating Mediastinal Tumor: Report of Two Cases. C. F. Storey.—p. 408.

Chondrodystrophia Calcificans Congenita: Report of Case. E. M. Savignac.—p. 415.

Device for Immobilizing Children During Radiographic Examinations. E. R. Miller.—p. 421.

Radiation Hazards to Embryo and Fetus.—Results of irradiation experiments on mice corroborated those obtained by other investigators in other mammals, fishes, birds, and invertebrate forms, which demonstrated that the developing embryo is highly susceptible to induction of malformations by irradiation. There is no reason to doubt that this also applies to human embryos. The authors' animal experiments demonstrated that there are well-defined critical periods for almost all the abnormalities obtained, i. e., a particular abnormality such as spina bifida, microphthalmia, coloboma, brain hernia, imperforate anus, hydronephrosis, oligodactyly, polydactyly, and tail and limb deformities may be produced with high incidence by irradiation at a particular stage or stages, but not at all by irradiation at other stages. Critical periods for the majority of gross abnormalities in mice occurred at a time which, in man, corresponds to the second to sixth week of gestation. During at least part of this period, pregnancy may be unsuspected. Irradiation at more advanced stages (corresponding to periods following the sixth week in man) produced less obvious and possibly more delayed effects, which, however, from the human point of view may be as harmful as the gross monstrosities. Doses high enough to produce developmental abnormalities did not necessarily cause abortion or prenatal death. The major malformations are probably due to direct irradiation effect on the embryo rather than indirect action through maternal injury. Doses as low as 25 r produced particular changes if applied at the critical time, and it is quite possible that even lower doses, i. e., well within the range used in diagnostic fluoroscopy, may cause subtle developmental alterations, which in humans would be important. Consequently the authors recommend that, whenever possible, irradiation involving the uterus in women of childbearing age should be restricted to the two weeks following the last menstrual period, to preclude the possibility of fertilization having taken place. This applies particularly to diagnostic irradiation, even if the doses involved are less than 25 r. The present practice of avoiding irradiation during a known pregnancy, that is during later stages, should not be relaxed. Whenever possible in nonpelvic irradiation, the conceptus should be shielded.

Review of Gastroenterology, New York

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Diseases of Pancreas: Medical Aspects. E. E. Gambill.—p. 194.

Surgical Aspects of Pancreatic Disease. C. B. Ripstein.—p. 203.

Cancer Chemotherapy. C. P. Rhoads.—p. 217.

Differences in Gastric Secretion in Normal Individuals and Patients with Peptic Ulcer: Their Bearing on Ulcer Management. E. Levin, J. B. Kirsner and W. L. Palmer.—p. 226.

Liver Disease and Liver Lymph. J. T. Nix.—p. 241.

Southern Medical Journal, Birmingham, Ala.

45:171-286 (March) 1952

*Megalo-Ureter: New Concept in Treatment. E. L. Lewis and J. C. Kimbrough.—p. 171.

Adolescent Coxa Vara: Clinical Considerations and Aspects of Treatment. I. H. Rapp.—p. 177.

Long Term Evaluation of Aureomycin in Treatment of Amebiasis. L. V. McVay Jr. and D. H. Sprunt.—p. 183.

Obstetrical Practice Under Conditions Imposed by All Out Defensive Warfare. W. A. Ruch.—p. 190.

Renal Hypertension. R. Lich Jr.—p. 194.

Realism in Rehabilitation of the Aged and Chronically Diseased with Regard to Public Health. H. A. Kemp.—p. 197.

External Ocular Signs Associated with Constitutional Disease. E. B. Dunphy.—p. 202.

Treatment of Dacryocystitis in Infants. E. N. Robertson.—p. 208.

Fetal and Neonatal Mortality: Analysis of 266 Deaths. G. T. Schneider, S. V. Ward and T. B. Sellers.—p. 211.

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A County Cares for Its Psychotics. S. G. Bedell.—p. 222.

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Repair of Anorectal Incontinence Following Operation for Fistula. W. A. Fansler.—p. 229.

The Gallbladder: Comparison of Roentgen and Pathologic Findings. P. E. Russo and C. J. Cavanaugh.—p. 232.

Clinical Evaluation of Neomycin in Different Bases. M. A. Forbes Jr.—p. 235.

Extra-Uterine Gestation Experience at Parkland Hospital, January 1944 to July 1951. C. R. Bates and G. C. Nabors.—p. 240.

A Layman Views the Medical Scene. U. Lee.—p. 246.

Professional Training for General Medical Practice. C. D. Leake.—p. 250.

Megaloureter: New Concept in Treatment.—Neurogenic megaloureter should be differentiated from that due to other causes. Hydroureter is accompanied by obstruction, whereas in neurogenic megaloureter there is no evidence of true obstruction in the drainage system. In neurogenic megaloureter the pelvis and calices are not dilated in proportion to the ureter; peristalsis is present in the dilated ureter; and there is a "normal" undilated segment at the lower end of the ureter with no tortuosity. The etiology of neurogenic megaloureter might be similar to that of megaloesophagus and Hirschsprung's disease (megacolon). This new concept of the etiology and treatment of Hirschsprung's disease led Lewis and Kimbrough to attempt a similar procedure in a case of megaloureter, since other measures such as meatotomy, nephroureterolysis, presacral neurectomy, nephrostomy, and cystostomy had not proved satisfactory. In the new method, the abnormal undilated segment was removed and an ureteroneocystostomy was performed. The hazards of the operation are stricture at the site of reimplantation and reflux. If these two complications can be prevented a good result should be obtained. A no. 16 polythene catheter was placed in the ureter as a splint and brought out through the bladder with the cystostomy tube. These were left in place about 14 days. There was no reflux, the dilatation disappeared, and the patient became asymptomatic. The authors present the histories of three patients in whom ureteroneocystostomy was done and who were followed long enough for evaluation. The results have been encouraging. Nephroureterectomy may be helpful if the megaloureter is confined to one side, but with the excellent results the authors obtained with their new method, they feel there is no justification for sacrificing good kidney tissue.

Surgery, Gynecology and Obstetrics, Chicago

94:257-384 (March) 1952

Origin and Significance of Macroscopic Intervillous Coagulation Hematomas (Red Infarcts) of Human Placenta. C. T. Javert and C. Reiss. —p. 257.
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Causes of Death Following Biliary Tract Surgery for Nonmalignant Disease. F. Glenn and D. M. Hays.—p. 283.
*Critical Evaluation of Antithrombin Test for Venous Thrombosis. J. McLachlin, R. Paul and J. C. Paterson.—p. 297.
Adenocarcinoma of Large Intestine Associated with Chronic Ulcerative Colitis. Clinical and Pathologic Features of 73 Cases. W. C. Shands, M. B. Dockerty, and J. A. Bargen.—p. 302.
Nutrition of Blood Vessel Grafts; India Ink Injection Study of Their Vascularization. W. S. McCune, J. R. Thistlethwaite, J. M. Keshishian and B. Blades.—p. 311.
Studies on Flash Burns: Thershold Burns. J. H. Morton, H. D. Kingsley and H. E. Pearse.—p. 317.
*Effective Control of Surgical Menopause by Estradiol Pellet Implantation at Time of Surgery. R. W. Delaplaine, J. R. Bottomy, M. Blatt and others.—p. 323.
Persistent Elevation of Serum Amylase in Acute Pancreatitis: Report of Five Cases. G. A. Olander, E. E. Glenn, G. Moy and C. B. Puestow. —p. 334.
Surgical Treatment of Traumatic Esophageal Perforation. W. Weisel and F. Raine.—p. 337.
Pulmonary Surgical Salvage by Bronchial Resection. P. W. Gebauer. —p. 347.
Study of Growth of Aortic-Pulmonary Anastomoses. W. J. Potts and W. L. Riker.—p. 358.
Pneumoarthrography of Knee. T. E. Keats, D. S. Staatz and R. W. Bailey.—p. 361.
Thoracic Cage Closure After Thoracotomy or Thoracoabdominal Exploration. R. H. Overholt and L. J. Kenney.—p. 365.

Antithrombin Test for Venous Thrombosis.—The blood antithrombin is considered of fundamental importance in preventing intravascular clotting. When antithrombin levels are low, as indicated by currently used antithrombin tests, this supposedly reflects a prethrombotic tendency. For the most part the validity of this assumption has been assessed clinically. McLachlin and his associates, however, during the course of venous dissections of the lower extremities in approximately 150 autopsies, were impressed with the high incidence of clinically "silent" thrombi. They feel that a more critical method of assessment is needed to evaluate diagnostic or therapeutic procedures for phlebothrombosis. They carried out serial determinations of the blood antithrombin levels about twice a week until death or recovery in 67 elderly veterans, the aim being to correlate the presence or absence of signs and symptoms of phlebothrombosis with the blood antithrombin levels, but particularly to compare the blood antithrombin levels with the presence or absence of venous thrombi at autopsy. Death resulted in 27, and at autopsy in 19 complete venous dissection of the lower extremities was done. So-called dangerous levels of blood antithrombin were found in 5 of the 67 patients, but in only one of the 27 who died. In 9 of the 19 in whom venous dissection was done at autopsy no evidence of thrombosis was found; in spite of this, borderline antithrombin levels were obtained in three of these cases. These borderline levels might thus be regarded as false positives. There were 10 patients who had definite venous thrombi of the lower extremities, but in only 2 of them was either a borderline or a dangerously low antithrombin level obtained during life. One of these, the only one with a dangerous level, does not stand up to critical analysis, because the dangerous level was obtained on a single occasion, three months before death, although histological examination of the thrombus at autopsy showed it to be of a recent nature. Since this method of assessment shows a complete lack of correlation, determination of the antithrombin level cannot be recommended for the prediction of venous thrombosis.

Control of Surgical Menopause by Estradiol Pellet Implantation.—Implantation of pellets of estradiol into the rectus muscle at the time of total hysterectomy and bilateral oophorectomy was done in a series of 35 patients below the age of 51. A corresponding number of similarly treated women received no pellets and served as controls. The dose implanted ranged from 25 to 75 mg., the majority of the patients receiving 75 mg. The effectiveness of therapy was determined by the clinical response, changes in the menopausal index, and alteration in the vaginal smear. The menopausal index was successfully used as a criterion of the severity of the menopausal syndrome and represents a numerical conversion of the sum of intensity of the 11 commonest menopausal symptoms: vasomotor disturbances, paresthesia, insomnia, nervousness, melancholia, vertigo, weakness (fatigue), arthralgia and myalgia, headaches, palpitation, and formication. It was found that pellet implantation at the time of surgery controlled most of the symptoms and reduced the severity of the menopausal syndrome for up to 15 months after surgery. The effectiveness of estradiol pellet implantation was substantiated by the continued control of menopausal symptoms and the maintenance of a normal or increased degree of cornification of the desquamated cells in the vaginal smear. Most of the control, nonimplanted patients required oral estrogen therapy to control their symptoms adequately. Pellet implantation provided a smooth postoperative course relatively free of the symptoms usually present in the woman in whom the menopause is induced by surgical treatment.

94:385-512 (April) 1952

*Value of Peroperative Manometric and Roentgenographic Examination in Diagnosis of Pathologic Changes and Functional Disturbances of Biliary Tract. P. Mallet-Guy.—p. 385.
*Choledochostomy with Cholangiography: Review of 50 Cases. M. Corff, S. Berger and J. Gershon-Cohen.—p. 394.
*Further Experiences with Local and Systemic Bacitracin in Treatment of Various Surgical and Neurosurgical Infections and Certain Related Medical Infections. F. L. Meleney, B. A. Johnson and P. Tang. —p. 401.
Double Onlay Bone Graft in Treatment of Delayed Union and Nonunion. J. E. Miles, G. A. Degenshein and A. A. Kane.—p. 426.
Physiological Mechanism for Death in Massively Bleeding Peptic Ulcer. H. H. Le Veen, A. G. Mulder and F. Prokop.—p. 433.
*Portacaval Shunting for Portal Hypertension. A. H. Blakemore.—p. 443.
Influence of Anesthesia, Operation, and Obstetrical Delivery upon Patients with Adrenal Cortical Insufficiency. H. Schwartz, W. S. Derrick and E. M. Papper.—p. 455.
Nonoperative Treatment of Perforated Peptic Ulcer. F. W. Taylor and H. L. Egbert.—p. 464.
Gallstone Ileus: Report of Eight Cases. P. Nemir Jr.—p. 469.
Studies in Experimental Frostbite: IX. Rapid Thawing and Prolonged Local Cooling in Treatment of Frostbite Resulting from Exposure to Low Ambient Temperature. H. B. Shumacker Jr. and A. W. Kunkler. —p. 475.
Acute Intestinal Obstruction in Elderly Patients. C. W. Cutler Jr.—p. 481.
Regeneration of Liver in Dog After Partial Hepatectomy: Role of Venous Circulation. J. H. Grindlay and J. L. Bollman.—p. 491.
Studies on Flash Burns: Protective Effects of Certain Fabrics. J. H. Morton, H. D. Kingsley and H. E. Pearse.—p. 497.

Peroperative Manometric and Roentgenographic Examination of Biliary Tract.—Cholangiography during operation was advocated by Mirizzi in 1930, but it was often difficult to interpret such cholangiograms. Since 1942 a technique of peroperative manometric and roentgenographic examination of the biliary tract has been perfected by Mallet-Guy. The technique involves two successive steps: (1) a manometric recording following injection of an isotonic and isothermic sodium chloride solution into the gallbladder or the common duct; (2) cholangiography, with two or three roentgenograms being taken at intervals of three minutes, after injection of a contrast fluid. The method should be used routinely, not merely for a few selected cases. Mallet-Guy used it in about 1,500 operations on humans and in numerous experiments on dogs. During cholecystectomy for gallstones without symptoms related to the common duct, exploration of the pancreas and common duct usually gives negative results. The cystic duct is identified, and half its circumference is cut 4 or 5 mm. in front of the common duct. Then a bent cannula is inserted into the common bile duct. A series of tests with the manometric apparatus may show (1) a tracing that stabilizes at

10 or 12 cm. of water, indicating a normal biliary passage; (2) a tracing below 7 cm. of water suggesting hypotonia of the sphincter of Oddi; or (3) a tracing stabilized at a high level, which indicates an obstruction. Then the cholangiographic examination is performed. The first roentgenogram is taken after an injection of 10 cc. of iodized oil, a second three minutes later, and if necessary a third one after another three minutes. If there has been no leaking or blocking of the transcystic cannula, manometric results correspond with roentgenographic images typical of a normal biliary passage, of hypotonia of the sphincter of Oddi and of the common bile duct, or of an obstruction such as that caused by a stone in the common duct, relative compression by chronic pancreatitis, or hypertonia or fibrous narrowing of the sphincter of Oddi. If such conditions are not recognized at operation, they will produce postoperative recurrences of pain or jaundice. These conditions are quite common, for in 100 patients operated on for gallstones, 38 had diverse pathological conditions. After removal of stones in the common duct, it is possible to show that no other obstruction remains and to decide whether external drainage, primary suture, or a choledochoduodenostomy is required. Manometric and roentgenographic examination for malignant obstructions of the common duct and for biliary functional disturbances by the method of puncture of the gallbladder are described.

Choledochostomy with Cholangiography.—The desirability of doing choledochostomy with cholecystectomy on the slightest suspicion that a stone is in the common duct is widely advocated, but Corff and associates feel that it is not done often enough. In 50 cases in which choledochostomy was done, none of the patients died. Choledochostomy was combined with cholecystectomy in 23 patients. In five choledochostomy alone was done, as the gallbladder had been removed previously. Three patients had cholecystostomy and choledochostomy, this procedure being reserved for the aged and the very sick. Two patients had cholecystojejunostomy and choledochostomy for inoperable carcinoma of the pancreas. The common duct was explored in 23 of the patients because of a history of or the presence of jaundice; in 17 because of dilatation of the common duct; in 6 because the gallbladder was full of small stones; in 2 because stones were felt in the common duct on routine palpation; in 1 to find the cause of the patient's unexplained biliary symptoms; and in 1 when roentgenoscopy done for other than biliary disease showed stones in the common duct. The most prevalent method of exploring the common duct being unreliable, the authors suggest the following measures to reduce the incidence of retained stone: (1) routine exploration of the common duct; (2) more accurate palpation of the common duct by palpation from the left side; (3) more frequent use of the lithophone; (4) the use of cholangiography in the operating room whenever there is the slightest indication; (5) routine use of the completion cholangiogram for check-up after choledochostomy.

Local and Systemic Use of Bacitracin in Surgical and Medical Infections.—The rationale and technique of local application of bacitracin are discussed and illustrated by four case histories. In neurosurgical infections instillation of 5 to 10 cc. of a bacitracin solution containing 500 to 1,000 units per cubic centimeter intrathecally, into the ventricle, or into the cavity left after excision of a brain abscess is well tolerated once or twice a day. This local use is probably more important than the intramuscular injections in such cases, because bacitracin does not readily pass the blood-brain barrier. In the dermatological literature there have been numerous favorable reports on the local use of bacitracin in the pyodermas. For infections of the mucous membrane of the alimentary tract administration of bacitracin by mouth may be considered local treatment inasmuch as bacitracin is not readily absorbed from the digestive tract. Bacitracin in ointment form has proved effective in conjunctival infections. The effect of the systemic administration of bacitracin by means of intramuscular injection with or without supplementary local administration was evaluated on the basis of 160 cases, in 29 of which the treatment was prophylactic. Of the 131 cases with active infection, about three-fourths had failed to respond to other antibiotic treatment, chiefly penicillin, before bacitracin was tried. The over-all results of therapy were favorable in 78% of the cases. In those which had had no previous treatment the results were favorable in 91%. Evidences of kidney toxicity were absent or mild in 68% of the cases, moderate and transient in 30%, and disturbing in only 2%. Bacitracin is an effective drug without serious toxicity, if material is used for systemic administration that meets a specification of a median lethal dose (LD$_{50}$) of 500 units for a 20 gm. mouse and if the dose is less than 100,000 units a day. Satisfactory control of infection can often be obtained by half that amount. Antibiotics can save a patient from prolonged illness and disability resulting from infections only if the causative organism is promptly identified and its susceptibility to the available antibiotics is ascertained.

Portacaval Shunting for Portal Hypertension.—The syndrome of portal hypertension is characterized by congestive splenomegaly, secondary anemia, leukopenia, thrombocytopenia, and gastrointestinal bleeding or evidence of esophageal varices. Banti's concept that the process originated in the spleen, later to be followed by disease of the liver, was corrected by Whipple, whose studies revealed that congestive splenomegaly with hypersplenism may be caused by a number of obstructive portal lesions. This paper is concerned chiefly with the treatment of portal hypertension by portacaval shunting. The term "portacaval shunt" is used by Blakemore and Whipple to include any type of anastomosis that joins the portal and caval systems of veins. Either the portal or splenic veins are large enough to establish portacaval shunts. By employing the suture technique, there were but 3 failures in 46 cases when the portal vein was used and 6 in 52 cases when the splenic vein was used. In 43 patients with portal hypertension secondary to extrahepatic portal block but normal livers, there were 3 postoperative deaths. In 117 cases of cirrhosis of the liver there were 27 operative deaths. With classification of the 117 cirrhosis patients into two groups on the basis of liver chemistry values and clinical factors, the results were as follows: of 64 good risk patients, 6 died at operation, of 53 poor risk patients, 21 died. The 43 good risk patients with extrahepatic portal block plus the 64 cirrhosis patients classified as good operative risks total 107, or two-thirds of the entire series of 160 cases. There were 9 postoperative deaths (8.4%) in the 107 cases. The chief purposes of portacaval shunting are (1) to protect patients from untimely death due to hemorrhage; and (2) to protect the livers in cirrhosis from the deleterious effects of recurring hemorrhage and wasting ascites, thus affording an opportunity for healing and regeneration of liver parenchyma with medical management. The author urges that patients be evaluated early for shunting, since delay may involve further deterioration of the liver.

Tennessee State Medical Assn. Journal, Nashville

45:47-82 (Feb.) 1952

Improving Infant Salvage with Cesarean Section. S. S. Lambeth.—p. 47.
Post-Partum Examination. P. Williamson.—p. 50.
Integral Implant Following Enucleation. J. Montgomery.—p. 53.
Compound Fractures. H. Smith and F. V. Costello.—p. 57.

45:83-126 (March) 1952

*Surgical Treatment of Mitral Stenosis. W. K. Swann, J. E. Acker, E. C. Sienknecht and R. B. Wood.—p. 83.
Surgical Management of Hirschsprung's Disease. J. L. Herrington Jr. —p. 87.
Carcinoma of Stomach: Survival Nine Years After Partial Gastrectomy. H. H. Shoulders and G. E. Johnson.—p. 91.
Diagnostic Procedures in Precordial Pain. E. W. Patton.—p. 94.

Surgical Treatment of Mitral Stenosis.—Swan and associates performed commissurotomy on 12 patients with stenosis of the mitral valve. None of the patients died, and all benefited from the operation. The patients obtained improvement in exercise tolerance with alleviation of dyspnea. Hemoptyses were eliminated. It is concluded that the patient who is disabled as a result of mitral stenosis should have the benefit of surgical treatment, if there are no contraindications to the operation. The authors did not use surgical treatment in those who had associated lesions such as mitral regurgitation, aortic stenosis and/or regurgitation, or active rheumatic fever. They found that for properly selected cases commissurotomy of the mitral valve is a safe operative procedure.

FOREIGN

Acta Medica Scandinavica, Stockholm

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Kidney Papers: VI. General Rate of Glomerular Filtration. G. Ekehorn. —p. 399.
*Studies in Catheterization of Heart in Cases of Patent Ductus Arteriosus Botalli. O. Storstein, S. Humerfelt, O. Müller and H. Rasmussen. —p. 419.
Incidence of Pernicious Anemia (Number of Patients in the County of Odense, Denmark, in December, 1950). J. Mosbech.—p. 433.
Effect of "Hydergine" (CCK) on Reflex Vasoconstriction and Reflex Blood Pressure Stimulation. A. Kappert, C.-H. Skoglund, A. Bergholtz and G. Nylin.—p. 440.

Herpes Labialis and Prognosis in Pneumonia.—Study of all cases of herpes labialis occurring in 31,940 patients treated in the Medical Department at Sundby Hospital in Copenhagen between 1933 and 1947 shows that it was associated with three groups of diseases: pulmonary disease, various nonpulmonary infections, and digestive disorders. Four hundred and twelve cases of herpes were found in the first group; only 51 in the second; and 9 in the third. Fever apparently activates the appearance of herpes; the author believes that every febrile patient with herpes should have a thorough examination of the lungs, including a chest roentgenogram. Analysis of the statistics relating to pneumonia shows that mortality was lower among patients with herpes than among those without, indicating that the appearance of herpes in pneumonia patients is a good prognostic sign. Closer study showed that this sign is real and does not arise from the fact that some pneumonia patients die before herpes has had time to develop. Efforts to discover the reason for the better prognosis have been unsuccessful.

Catheterization of Heart in Patent Ductus Arteriosus.—Recent advances in surgical treatment of congenital heart disease make accurate diagnosis of cardiac malformations indispensable. Patent ductus arteriosus, coarctation of the aorta, stenosis of the pulmonary artery, and the tetralogy of Fallot can now be treated surgically, but if other malformations exist, they may contraindicate an operation. Twenty-one patients with patent ductus arteriosus, ranging in age from 5 to 71 years, were subjected to catheterization of the heart in addition to routine clinical, radiological, and electrocardiographic examination. The characteristic machinery murmur was not audible in three of these cases; apart from thoracotomy, catheterization of the heart is the only procedure by which the diagnosis can be established. Dilatation of the pulmonary artery, usually with signs of increased vascularization of the lungs, was shown by the radiological examination in every case. The electrocardiogram is usually normal in patients with patent ductus arteriosus, indicating that the strain on both ventricles is equally great. The work of the left ventricle is increased on account of the abnormally high output; that of the right on account of increased pulmonary pressure. A rough calculation of the work performed by the heart per minute shows that a patent ductus causes a 70% increase in the work of the right ventricle and a 130% increase in that of the left ventricle; if there is considerable hypertension in the pulmonary artery, more work will be required from the right ventricle. Evidence of right retardation in the electrocardiogram indicates right heart strain resulting from an increased work load on the right ventricle.

Archivos de Pediatría del Uruguay, Montevideo

13:1-64 (Jan.) 1952. **Partial Index**

Introduction to Study of Growing Children. G. de Toni.—p. 5.
*Cerebral Angiography in Diagnosis of Intracranial Hydatid Cyst: Surgical Treatment. E. C. Palma.—p. 18.
Two Cases of Sickle Cell Anemia. E. Peluffo and J. Nordmann.—p. 37.
*Mumps in Pregnancy and Multiple Deformities in Infant. Case. J. Gabito Farias.—p. 42.

Cerebral Angiography in Diagnosis of Intracranial Hydatid Cyst.—Intracranial hydatid cyst is rare. There are no focal symptoms. Biological tests and eosinophilia are of no diagnostic value. Simple roentgenography of the skull shows local changes in the suspected area. Cerebral angiography is of pathognomonic diagnostic value. The treatment consists of ample craniotomy and protection of deep and superficial tissues by means of a double barrier of cotton, one being moistened with isotonic sodium chloride solution, and the other with 1% formaldehyde solution. The patient is placed in marked Trendelenburg's position, with the head inclined on the involved side. The cyst is punctured, partially evacuated, and then excised, instrumentally with a blunt spatula. The patient of this report was a child of 6 years of age. She complained about headache of long duration and showed a tumefaction on the skull, and roentgen changes at that zone. Angiocardiography was well tolerated. It showed a large extracerebral intracranial hydatid cyst on the left extradural space. The cyst was removed by the aforementioned technique. Two months after the operation pneumoencephalography revealed complete reexpansion of the left hemisphere into its normal place, residual internal hydrocephalus at the posterior zone of the left ventricle, and cicatricial atrophy of the cerebral cortex in the zone previously pressed by the cyst. The patient was in good health several months after the operation.

Mumps in Pregnancy.—In the third month of pregnancy a primipara had the mumps. She had never had roentgen and radium treatments. She and her husband were young, healthy, normal, not related by blood, and had neither syphilis nor alcoholism. There was no history of deformities in the families of either. The child was born at full term; it was of normal size and weight, but had bilateral hare lip and double palatine fissure. The ears had no pinna, ending in a point, like those of a coyote. The child had polydactylism and a valgus foot. He was able to suck from a bottle. He lived for five days and died suddenly, apparently from paralysis of respiration. The author believes women who have a virus disease, especially mumps, early in pregnancy should be informed by the physician of the possibility of deformity of the fetus and the advisability of interrupting pregnancy. The information should be given to her in the presence of the husband so that they may discuss whether the medical advice will be accepted.

Australian and New Zealand J. Surgery, Sydney

21:161-240 (Feb.) 1952

The Anal Canal and Rectum. C. N. Morgan and E. S. R. Hughes. —p. 161.
Five Cases of "Adenochondroma" of Lung. A. V. Jackson.—p. 173.
Pseudo-Glioma, Retinitis and Retro-Lental Fibroplasia. K. O'Day. —p. 179.
Background to Medical Practice and Training of Surgical Apprentices and Pupils in Van Diemens Land. W. E. L. H. Crowther.—p. 185.
Tumours of Pituitary Body and Its Environs: Note on Pathogenesis of Complex Cysts and Tumours. E. S. J. King.—p. 201.
Primary Skin Graft Following Excision of Fistula-in-Ano. E. S. R. Hughes.—p. 212.
Scope of Total Prostatectomy. S. C. Fitzpatrick and A. D. Matheson. —p. 214.
Congenital Malformations of Urogenital Tract and Rectum. J. D. Hicks. —p. 219.
*Pathology of Inter-Digital Pilonidal Sinus. J. T. Hueston.—p. 226.

Interdigital Pilonidal Sinus.—Interdigital pilonidal sinus occurs almost exclusively in barbers. The sinus may exist for years without requiring medical attention, but some barbers have episodes of cellulitis or abscess formation requiring incision. The commonest cleft involved is that between the ring and middle fingers, but sinuses have been observed in all four clefts. Some sinuses have large openings, but smaller sinuses may close. Occasionally multiple sinuses are present in one interdigital cleft. In most longstanding cases it is possible to palpate the deep part of the sinus in the web space as a firm, round mass, the size of a pea. The patient whose case is reported was a barber, aged 49, who for the past five years had noticed a tiny opening between the index and middle fingers of the right hand, and another between the middle and ring fingers for the past three years. At night he often removed hair fragments from these openings. There had been two episodes of cellulitis of the third web space. At operation, an ellipse of skin was excised, including the orifices, and the soft tissue of each web space was dissected out in a block attached to the skin. The skin edges were sutured and healing occurred by first intention. The larger sinus was found to contain a small amount of pus and six tiny black hair fragments. Histologically the interdigital pilonidal sinus is identical with the pilonidal sinus in the postanal region. The main feature is a track lined by stratified squamous epithelium leading to a collection of hair fragments. The depths of the sinus may be lined by epithelium, but more commonly by granulation tissue. A piece of adhesive over the web space during working hours may result in permanent closure of a sinus, but the sinus and deep abscess should be excised during the quiescent stage if cellulitis occurs repeatedly.

Beiträge zur klinischen Chirurgie, Munich

184:1-128 (No. 1) 1952. **Partial Index**

- *Fundamentals of Roentgenologic Diagnosis of Small Gastric Cancer.* W. Abel.—p. 1.
- Primary Carcinoma of Ureter. S. Petković.—p. 27.
- *Malignant Fibroepithelioma of Penis.* G. Rotthauwe.—p. 41.
- Clinical Aspects and Treatment of Sclerodermia. H. Zettel.—p. 46.
- *Vascular Histology of Stomach and Duodenum in Presence of Gastroduodenal Ulcers. W. Herzog.—p. 74.
- *Dangers and Shortcomings in Use of Chemotherapeutic Agents and Antibiotics.* K. Hinrichs and F. Truss.—p. 111.

Histological Studies on Vessels in Gastric and Duodenal Ulcers.—Herzog was interested in the concept that gastrointestinal ulcers might be caused by vascular disturbances. Specimens obtained at resection were fixed immediately in a 10% solution of formaldehyde. After they were embedded in paraffin, alternate serial sections were stained with hematoxylin-eosin or as for elastic tissue. Summarizing his histological studies on over 3,000 specimens from 112 cases of gastric and duodenal ulcers, the author directs special attention to the occurrence in the ulcer region of arteriovenous anastomoses and of contracted or cushioned veins. These latter have sphincter-like arranged longitudinal muscular bundles, which are connected by elastic fibers and protrude into the lumen like cushions or bolsters. These cushioned veins often concur with the so-called cushioned arteries. Contracted veins and cushioned arteries presumably have blocking functions. The author also mentions so-called funnel veins. He concludes that these vascular peculiarities in the presence of peptic ulcers imply that circulatory conditions play a part in ulcer genesis and deserve further investigation.

Canadian Medical Association Journal, Montreal

66:211-308 (March) 1952

- Surgical Treatment of Hypertension: 17 Years in Retrospect. A. C. Abbott.—p. 211.
- *Abdominal Aortography in Urology.* N. E. Berry, E. P. White and J. O. Metcalfe.—p. 215.
- Arteriosclerotic Patient as Surgical Risk. G. A. Copping.—p. 217.
- Psychological Aspects of Physical Illness. E. Wittkower.—p. 220.
- *Cortisone and ACTH in Treatment of Rheumatic Fever. A. L. Johnson, M. F. McCall, E. R. Harpur and others.—p. 225.
- Twenty-Six Cases of Asymptomatic Duodenal Ulcer. P. A. Rechnitzer and J. H. Geddes.—p. 231.
- *Retinal Vessels of Fundus Oculi in Hypertension.* K. B. Johnston.—p. 233.
- Earache. E. J. Smith.—p. 234.
- Practical Aspects of Fluid and Electrolyte Balance. J. R. McCorriston and G. G. Miller.—p. 237.
- Dermatopathic Lipomelanotic Reticular Cell Hyperplasia of Lymph Nodes. C. Auger, J. Gandbois and E. Gaumond.—p. 245.
- Acute *Traumatic Chest.* C. S. Dafoe.—p. 249.
- Sarcoma of Stomach. J. Turcot.—p. 252.
- Pharyngo-Oesophageal Diverticula. E. C. Janes.—p. 255.
- Consanguinity and Its Significance in Family History. F. C. Fraser.—p. 258.
- Bronchogenic Carcinoma. N. C. Delarue.—p. 261.
- Safer Anaesthesia. R. G. B. Gilbert.—p. 267.

Cortisone and Corticotropin in Rheumatic Fever.—The 39 children whose cases are reviewed in this paper were the first of 62 treated for rheumatic fever with cortisone or corticotropin between March, 1950, and September, 1951. The children ranged in age from 3½ to 15 years, and there were 19 girls and 20 boys. The follow-up period was between 3 and 16 months. Twenty-six were given daily one intramuscular injection of cortisone for from 20 to 23 days, the daily dose starting at 200 mg. for two days and continuing thereafter at 100 mg. daily. Seven patients were given the drug orally every eight hours for from 20 to 28 days. The initial daily dose was usually 200 mg. (range 150 to 350 mg.) for one to four days, with subsequent doses of 100 to 150 mg. Six children were treated with corticotropin intramuscularly every six hours; total amounts administered ranged between 480 mg. and 2.54 gm. for periods varying between 7 and 39 days. Five children showed no response. In five others the clinical manifestations reappeared from four to six days after cessation of therapy, and four others had recurrent episodes of rheumatic fever from one to six months after completion of therapy. Nine patients had had one or more prior episodes, and they responded to treatment in the recurrent acute phase as satisfactorily as those treated in the first attack. The ready response of fever, pulse rate, arthritis, and sedimentation rate, and the increase in hemoglobin and fall in globulin and fibrinogen were similar to experience reported by others. All five patients with chorea improved concurrently with therapy, but in only one case was it certain that therapy had influenced the course of the illness. Seven patients were ill with acute carditis. All showed an excellent response to therapy within 48 hours, and two were discharged without clinical evidence of cardiac involvement. A decrease in heart size was observed in four children. Changes occurred in 7 of 17 patients with noticeable cardiac murmurs; apical systolic murmurs disappeared in 3 patients during or shortly after therapy, and diminished in 2 patients. An aortic diastolic murmur diminished in one instance, and an apical mid-diastolic rumble disappeared in another.

Deut. Ztschr. f. Verdauungs-& Stoffwechselkr., Leipzig

12:1-48 (No. 1) 1952. **Partial Index**

- *Rectal Absorption of Insulin with Aid of Hyaluronidase. E. Klotzbücher.—p. 7.
- Studies on Iron Metabolism: Renal Excretion of Iron in Various Diseases. A. Morczek.—p. 14.
- *Follow-Up Studies on Patients After Billroth II Operation.* W. Crecelius.—p. 21.

Rectal Insulin Absorption with Aid of Hyaluronidase.—The effect of rectally administered insulin was compared with that of subcutaneously administered insulin in persons without diabetes. The dose of insulin in each case was 10 units. It was found that when the rectal administration of insulin was preceded by introduction of hyaluronidase into the rectum, there was a reduction in blood sugar that amounted to 59% of that induced by subcutaneous administration of insulin. Rectal administration of insulin without the preparatory hyaluronidase introduction caused a slight increase in blood sugar content, probably owing to an admixture of a glycogenic substance.

Edinburgh Medical Journal

59:113-160 (March) 1952

- Occlusion of Abdominal Aorta. C. C. Burt, J. Learmonth and R. L. Richards.—p. 113.
- Tuberculosis: Incident or Disease? C. Cameron.—p. 143.

Journal Obst. & Gynaec. Brit. Empire, Manchester

59:1-152 (Feb.) 1952. **Partial Index**

- Effects of Anaesthesia upon Fallopian Tubal Motility. A. H. C. Walker and R. J. Stout.—p. 1.
- Nephritis in Pregnancy: Follow-Up Study. H. F. H. Hamilton.—p. 25.
- Relative Merits of Basal Narcotics in Treatment of Eclampsia (Including Series of 36 Cases of Eclampsia Treated with Avertin Without Maternal Death). A. U. Campbell and H. Burton.—p. 30.
- *Scalp Abscesses in the Newborn: Discussion of Their Causation. D. MacCarthy, A. H. C. Walker and S. Matthews.—p. 37.
- Some Aspects of Renal Insufficiency in Obstetric Practice. I. MacGillivray and A. D. T. Govan.—p. 52.
- X-Ray Diagnosis of Genital Tuberculosis. S. Rozin.—p. 59.
- Hydradenoma of Vulva. A. L. Deacon and C. W. Taylor.—p. 64.
- Treatment of Pre-Eclamptic Oedema with Ion Exchange Resins: Preliminary Report. H. M. Carey.—p. 67.
- Retro-Pubic Suspension of Urethra and Bladder Neck in Treatment of Female Incontinence. J. A. Chalmers.—p. 77.
- Vaginal Metastases from Carcinoma of Ovary. G. M. Evans.—p. 82.

Scalp Abscesses in the Newborn.—During three years in which there were 354 forceps deliveries at the Postgraduate Medical School of London, MacCarthy and associates noted a lesion in the right parietal region in 15 cases; 9 of these were abscesses. Four more scalp lesions were seen after spontaneous delivery in the right parietal region, making in all 19. Two of these were abscesses. In two of the forceps cases the lesions were bilateral, but the right side was more affected than the left. Three cases of pressure necrosis of other parts of the scalp and one of the arm, and one case of osteomyelitis of the occipital bone, are described. In attempting to explain these lesions the following factors are discussed: (1) injury by the right forceps blade; (2) prolonged pressure on the right parietal bone in labor, predisposing to infection or causing ischemic necrosis; and (3) local pressure and hematogenous infection. Any break of surface of the baby's skin may become infected, however thorough the precautions. After forceps delivery the scalp should be examined for abrasions and, if they are present, local treatment and antibiotics should be given at once. Delay in labor, particularly during the second stage, should be avoided. When forceps are indicated, it should be appreciated that the parietal eminence has possibly already undergone a period of pressure and that, if the head is not fully rotated before application of the blades, traction will further accentuate this pressure, with further risk of injury to the scalp tissues. If the blades do not easily lock, the obstetrician should remove the blades and reexamine the situation, and then try to secure full rotation. Since the forceps are designed to fit the fetal head, faulty application resulting in poor rotation will disturb the dynamics, resulting in a forward projection of the parietal eminence so that it will be subjected to excessive pressure against the pubic bone. The authors deplore the use of Willett's forceps at cesarean section because the head may be delivered by other means. The injury caused by Willett's forceps is sometimes more than trivial. The puncture wound is probably less dangerous than the open tear, but both may result in inflammation or ulceration.

Journal of Physiology, London

116:129-244 (Feb.) 1952. Partial Index

Muscle Performance in Rats, Normal and Treated with Growth Hormone. B. Bigland and B. Jehring.—p. 129.
Respiratory Rate and Volume in the Premature Infant. K. W. Cross and T. E. Oppé.—p. 168.
Study of Movements of Auditory Ossicles Under Stroboscopic Illumination. R. Guelke and J. A. Keen.—p. 175.
Effect of Adrenals and Pituitary on Blood Pressure and Cardiac Hypertrophy of Rats. M. Beznák.—p. 219.
Distribution Along Small Intestine of Afferent, Vasoconstrictor and Inhibitory Fibres in Mesenteric Nerve Bundles. C. B. B. Downman. —p. 228.
Effect of Adrenocorticotrophic Hormone (ACTH) and Cortisone on Pregnancy. J. M. Robson and A. A. Sharaf.—p. 236.

Lancet, London

1:575-622 (March 22) 1952

Interpretation of Statistical Trends in Tuberculosis. V. H. Springett. —p. 575.
Poisoning by Barbiturates: Success of Conservative Treatment. S. Locket and J. Angus.—p. 580.
Kemadrin in Postencephalitic Parkinsonism. E. Montuschi, J. Phillips, F. Prescott and A. F. Green.—p. 583.
*Rubber Tubing as Cause of Infusion Thrombophlebitis. R. P. C. Handfield-Jones and H. B. M. Lewis.—p. 585.
Pancreaticogastrostomy. C. Wells, J. A. Shepherd and N. Gibbon.—p. 588.
Pancreaticogastrostomy. A. S. Dill-Russell.—p. 589.
*Value of Modified Starch as Substitute for Talc. J. D. P. Graham and M. E. Jenkins.—p. 590.
Serious Idiosyncrasy to Methoin. P. MacArthur.—p. 592.
Physiological Activity of 3:5:3'-L-Triiodothyronine. J. Gross and R. Pitt-Rivers.—p. 593.
Strangulated Femoral Hernia in a Young Boy. J. L. Temple.—p. 594.

Thrombophlebitis Caused by Rubber Tubing.—A preliminary survey of 80 infusions at the Radcliffe Infirmary revealed that 38 were complicated by thrombophlebitis, which was defined as thrombosis of more than 1 in. (2.5 cm.) of the vein, together with redness and edema of the overlying skin; simple thrombosis without inflammation was not included. The thrombophlebitis began at the site of the infusion and spread proximally along the vein; in some severe cases the vein was affected from the wrist to the shoulder or from the ankle to midthigh. Thrombophlebitis was associated with infusions of blood, isotonic sodium chloride solution, and dextrose solution. The incidence increased with the duration of the infusions. Replies to a circular letter sent to the pathologists of hospitals in different parts of Britain indicated that there was a similar incidence of this complication elsewhere. Among the possible causes considered were (1) bacterial infection; (2) an irritant in the rubber tubing or the other components of the transfusion sets; (3) an irritant in the fluids infused; and (4) a tissue reaction to the trauma inflicted by venepuncture or cannulation. Four different types of rubber tubing were used in an investigation of this complication in infusions of 139 patients, and analysis of the data suggested that thrombophlebitis was chiefly due to the tubing in routine use. The biological effects of rubber need further investigation, and standards should be determined for the constituents of rubber used for therapeutic purposes.

Modified Starch as Substitute for Talc.—Studies were made on three starch glove powders that have been introduced as substitutes for talc. Tests of physical, chemical, and biological properties indicated that, though by no means harmless, they are not inferior to talc in physical properties and are vastly superior in biological properties.

Maandschrift voor Kindergeneeskunde, Leyden

20:1-36 (Feb.) 1952

Half a Century of Pediatrics. E. Gorter.—p. 1.
*Tridione and Nephrosis. W. H. H. Tegelaers and H. Tiddens.—p. 23.

Nephrosis Caused by Trimethadione (Tridione®).—Symptoms of nephrosis developed in a boy, aged 7, one year after treatment with trimethadione (tridione®) had been instituted on account of petit mal attacks. Changes in the blood chemistry and in urea and creatine clearance figures indicated that the glomerular function was damaged. Treatment with a high protein and low sodium diet improved the general condition, but edema formation increased. Human albumin and plasma were given to induce diuresis and counteract the edema, but the albumin content remained low during and for a time after treatment. Complete cure resulted. The patient had no petit mal attacks while under treatment for nephrosis, although electroencephalographic studies revealed the persistence of certain abnormalities. The author cites four cases from the literature in which anticonvulsive treatment with trimethadione produced the nephrosis syndrome, in two of which the patients died.

Medical Journal of Australia, Sydney

1:205-240 (Feb. 16) 1952

The Edward Stirling Lectures—Lecture I: Pre-Natal Paediatrics. L. Dods. —p. 205.
Cortical Neurology: Visual Disturbances and Optic Part of Body Image. I. H. Martin.—p. 211.
Social and Tropical Medicine in University of Queensland. E. S. Meyers. —p. 221.
*Case of Waterhouse-Friderichsen Syndrome with Recovery Following Use of Cortisone, Aqueous Adrenal Cortical Extract and Chemotherapy. H. P. B. Harvey.—p. 222.

1:241-276 (Feb. 23) 1952. Partial Index

Some Aspects of Paediatric Endocrinology. L. Dods.—p. 241.
Surgery of Adrenal Glands. E. Wilson.—p. 249.
Acute Diverticulitis of Colon with Peritonitis. E. S. R. Hughes and H. M. Shaw.—p. 259.

1:277-312 (March 1) 1952. Partial Index

Radiation Hazards of Atomic Energy. M. Oliphant.—p. 277.
Sciatica and Such Conditions of the Back as Accompany It. J. R. Barbour.—p. 285.
Death Under Anaesthesia: Mr. J. G. Beaney's Case. B. Gandevia. —p. 291.
Acute Epidemic Haemorrhagic Fever. D. D. Beard.—p. 294.

Recovery in Waterhouse-Friderichsen Syndrome.—The occurrence of fulminating meningococcic septicemia is reported in a 7-year-old girl. In contrast to the almost invariably fatal outcome in many cases of Waterhouse-Friderichsen syndrome cited in the literature, recovery in the author's case followed the use of penicillin, sulfadiazine, intravenous fluid administration, and adrenal replacement therapy with adrenal cortex extract ("eschatin") and cortisone. The primary therapy, consisting of 10 cc. of adrenal cortex extract, 200,000 units of penicillin and 2 gm. of soluble sulfadiazine, was completed within 20 minutes, and the response was instantaneous and dramatic. The patient's blood pressure rose, the cyanosed cold extremities rapidly became pink and warm, and the pulse became easily palpable. Meningitis then dominated the picture. Fluids were given by mouth as well as by a very slow intravenous drip, and though some vomiting occurred in the next two days, by the fifth day

Tubercle, London

33:65-96 (March) 1952

Experience with 70 mm. Mirror-Camera Mass X-Ray Unit. J. Deeny, N. F. Walsh, M. M. Conran and B. A. Walsh.—p. 66.
Recording in Mass Radiography. J. Deeny, N. F. Walsh, M. M. Conran and B. A. Walsh.—p. 70.
Perpetuation of Tuberculous Infection in England and Wales: Speculative Synthesis. B. Benjamin and F. A. Nash.—p. 73.
Public Opinion Concerning Tuberculosis. S. T. David.—p. 78.

Ugeskrift for Laeger, Copenhagen

114:259-290 (Feb. 28) 1952. **Partial Index**

Treatment of Meningitis due to Pfeiffer's Bacillus with Streptomycin, Penicillin and "Sulfacombin." J. Andersen.—p. 259.
*Clinical Picture in Primary Hyperparathyroidism Illustrated by Four Cases. K. Schmith and V. Faber.—p. 267.
Iodine and Methylcellulose Treatment in Keratoconjunctivitis Sicca. P. M. Møller.—p. 278.

Clinical Picture of Primary Hyperparathyroidism.—In primary hyperparathyroidism, which is almost always due to adenoma formation, there is a tendency to spontaneous recovery, but permanent organic injury, especially of the kidneys, often remains. The disease perhaps occurs oftener than is indicated by the number of cases in which diagnosis is made. Because of the polymorphic clinical picture and the absence of characteristic symptoms the disease is easily misinterpreted. In cases recognized late the renal disorder progresses and leads to hypertension and nephrosclerosis. The course is generally chronic, but acute cases are seen. Schmith and Faber describe four cases fully. The first two represented renal hyperparathyroidism without changes in the bones or demonstrable calcium precipitation in the urinary tract but with symptoms of renal insufficiency, no hypertension, and only weak, inconstant albuminuria. In both cases a parathyroid adenoma was removed, and the prognosis was considered good. In the third case of acute fatal hyperparathyroidism without roengenologically demonstrable changes in bones or kidneys, and with greatly reduced renal function, necropsy revealed an adenoma and the multiple venous thromboses characteristic of acute parathyroid intoxication, but no calcium deposits in the internal organs. The fourth case was that of a classic generalized osteitis fibrosa with gastrointestinal symptoms, marked renal insufficiency, and gradual decalcification of the bones. On renal biopsy calcium deposits not visible roentgenologically were found in both the cortex and medulla. After removal of an adenoma of the size of a walnut, hypocalcemia developed. The prognosis was unfavorable.

Union Médicale du Canada, Montreal

81:245-376 (March) 1952. **Partial Index**

*Use of Ether in Treatment of Residual Calculi of Common Bile Duct. J. M. Bourque.—p. 248.
Vertebral Column in Rheumatology. J. Jobin.—p. 256.
Requirement of Ascorbic Acid for Acclimatization of Rhesus Monkeys to Low Temperatures. L. P. Dugal and G. Fortier.—p. 262.

Ether Treatment of Calculi of Common Bile Duct.—Pribram's method of treatment for residual calculi following surgical intervention in the common bile duct was used by the author in three patients. It consists of instillation of ether and liquid paraffin through a "T" tube indwelling in the common bile duct. Within 10 to 13 days after cholecystectomy or cholecystotomy and choledochotomy for removal of calculi from the gallbladder and the common bile duct, cholangiography with iodized oil as contrast medium was carried out because of pain, abdominal distention, and frequent belching. It revealed complete obstruction at the level of Vater's ampulla, dilatation of the common bile duct, and reflux of the iodized oil. Irrigation of the common bile duct with 2 cc. of ether followed by 5 cc. of paraffin oil through the "T" tube was performed twice a day. Two of the patients were also given glyceryl trinitrate or atropine sulfate orally in order to relieve the spasm of the sphincter of Oddi. In the first patient treatment was continued for 10 days. The "T" tube then was closed, and repeated cholangiography revealed permeability of Vater's ampulla, absence of calculi in the still-dilated common bile duct, and free passage of the iodized oil into the duodenum. The "T" tube then was removed. In the second patient treatment was continued for four days, and repeated cholangiography revealed the same satisfactory results as in the first patient. Following choledochotomy and removal of two large calculi, the third patient first was treated with glyceryl trinitrate and atropine sulfate for 10 days without effect. The common bile duct was irrigated with ether two or three times a day for four days. The patient had severe pain and refused continuation of the treatment. Four days later intervention was repeated by transduodenal route, and fragments of calculi were observed at the level of the sphincter of Oddi. A new "T" tube was inserted for two weeks. The postoperative course was stormy, but the patient recovered. The failure of the ether treatment in this patient was due to the lack of perseverance of the author rather than to the deficiency of the method. The effectiveness of the ether is due to its property of dissolving the cholesterol of the calculi. This effect is aided by the emollient action of the paraffin oil, which softens, fragmentizes, and decomposes the calculi. Bile salts administered orally or by injections, by increasing the volume and the flux of the bile, and magnesium sulfate by its cholagogue action, may aid drainage of the biliary passages.

Wiener medizinische Wochenschrift, Vienna

102:159-180 (March 1) 1952. **Partial Index**

*History, Diagnosis, Treatment and Evaluation of Changes of Intervertebral Disk and of Cerebral Concussion. L. Böhler.—p. 162.
*Problem of Forty-Eight Hour Limit in Acute Appendicitis. P. Fuchsig and H. Triska.—p. 165.
Indicated and Controlled Treatment of Mammary Carcinoma with Hormones. E. Schmidt-Ueberreiter.—p. 167.

Evaluation of Herniated Intervertebral Disk and Cerebral Concussion.—Böhler in his capacity as chief surgeon of the Vienna accident insurance hospital where admittance is limited to patients with industrial injuries or occupational diseases has been called upon to give his opinion as an expert in cases of true or erroneously suspected prolapse of intervertebral disk, in cases with an erroneous diagnosis of spastic paresis after cranial trauma, and in cases of psychic disturbances after cerebral concussion. On the basis of his large experience he states that the sudden occurrence of back pain (lumbago) should not invariably be regarded as evidence of prolapse of an intervertebral disk, and radical procedures such as myelography or surgical intervention should be recommended only if the pain is intense, of long duration, and does not respond to conservative treatment. Application of a plaster-of-paris jacket for six months may prevent a true prolapsed intervertebral disk from getting worse but may not induce a cure, while in a patient with erroneously suspected prolapse of intervertebral disk this procedure may be harmful from the psychic and from the financial point of view. Lumbago should first be treated by application of heat and rest. Myelography should be performed only in the presence of definite neurological signs of herniated intervertebral disk, and surgical intervention should be practiced only if myelography has proved to be positive. Neurotic persons should not be subjected to surgical treatment. The author believes that spastic paresis is a disease of the central nervous system and never a sequela of a relatively mild cranial trauma without concussion. One should avoid the error of attributing nervous diseases to accidents. Permanent psychic disturbances occur rarely following cerebral concussion except in persons who are insured against accident. Insignificant accidents may induce severe neuroses. Neuroses after accidents may never be cured if the patient is entitled to compensation. Neuroses after accidents are nearly always iatrogenic.

Forty-Eight Hour Limit in Acute Appendicitis.—In 1902 Ochsner postulated that in cases of acute appendicitis of longer than 48 hours' duration, surgical intervention should be performed only if symptoms of progressive peritonitis make such intervention indispensable. Lately there has been a tendency towards relaxing this strict rule to spare the patient the long stay in bed required by conservative treatment. Of 325 patients with acute appendicitis admitted to the first surgical university clinic in Vienna, 203 were operated on before 48 hours had passed and 122 were operated on after 48 hours. Three of the 203 patients died, a mortality rate of 1.5%, and the average length of hospitalization was 15 days. Six of the 122 patients died, a mortality rate of 4.9%, and the average time of hospitalization was 18 days. These statistical data alone demonstrate the importance of early surgical intervention, which however may be possible in only two-thirds of the patients, even in large cities. Of the 122 patients operated on after 48 hours, 10 did not have diffuse peritonitis or a clinically progressive course, but perityphlic infiltration and occasionally a small encysted abscess were observed. This infiltration was manifested clinically in only five patients. In the other five the appendicitis seemed to fade away, and apparently was of the type in which according to Kunz immediate surgical intervention may be performed after 48 hours. Of the 10 patients with this type of appendicitis, however, the only one who died belonged to this latter group. On operation a small abscess was observed, and death resulted although the abscess was drained and antibiotic therapy had been instituted on the first day of treatment. On the contrary, not one of 31 additional patients with acute appendicitis associated with infiltration and encysted abscess diagnosed on admission and treated conservatively died; the infiltration was absorbed slowly or there was spontaneous perforation into the intestine. The authors, therefore, recommend that immediate surgical intervention should not be performed after 48 hours if the appendicitis is not progressive and if infiltration cannot be palpated. Symptoms will subside in a large majority of these patients, and some days later operation may be performed without any risk. In only about 10% of these patients infiltration may develop within a short observation period, and in these conservative treatment should then be continued and supported by antibiotic therapy. This procedure seems advisable as long as it has not been proved that sulfonamide and antibiotic therapy may render surgical intervention on recent infiltration free from risk.

Zentralblatt für Chirurgie, Leipzig

77:81-128 (No. 3) 1952. Partial Index

Congenital Stomach Cysts. A. K. Schmauss.—p. 92.
*Chronic Pancreatitis and Its Surgical Treatment by Splanchnic Resection on Left Side. O. H. Kment.—p. 100.
*Cold Injuries—Rewarming Injuries. H. Killian.—p. 105.
History of Intra-Arterial Blood Transfusion. G. Jorns.—p. 112.
Tetanus Prophylaxis. H. von Jaschke.—p. 117.

Splanchnic Resection in Chronic Pancreatitis.—The surgical treatment of chronic pancreatitis, which in 90% of the cases is secondary to a disorder in the biliary system, was not satisfactorily solved by Payr-Martina's splitting of the capsule nor by Mallet-Guy's partial pancreatectomy. Subsequently Whipple and Brunschwig employed more extensive procedures, but Kment is concerned primarily with the less mutilating resection of the greater splanchnic nerve on the left side. Leriche was the first to try procaine (novocaine®) hydrochloride blockage of the greater splanchnic nerve, which produced favorable effects on the pains caused by chronic pancreatitis. Mallet-Guy further developed Leriche's method. Anatomic studies by Sousa-Pereira had proved that the greater splanchnic nerve on the right side innervates the extrahepatic bile passages and the liver, while the greater splanchnic on the left side innervates the pancreas. Mallet-Guy and his associates were able to corroborate this. Kment agrees with Mallet-Guy that interruption of the greater splanchnic on the left side not only excludes the pain conducting viscera afferent tracts, but he believes that this splanchnic nerve also carries vasomotor and secretory fibers. Since local vasomotor disturbance plays a part in chronic pancreatitis, interruption of the greater splanchnic also influences the pancreatitis. Kment carried out splanchnicectomy on the left side in two women and one man with chronic pancreatitis. All three previously had undergone cholecystectomy and all three had the desired effects from the splanchnicectomy. In a fourth patient who at present is undergoing procaine blockage of the splanchnic nerve, splanchnicectomy will be carried out. The approach is subdiaphragmatic through an ordinary flank incision. The author concludes that his observations on four cases corroborated the experiences of French and American authors.

Cold Injuries and Rewarming Injuries.—Exposure to cold of the entire body and local freezing differ in their pathophysiological aspects. Death resulting from exposure to cold is not due to cell destruction, but is rather due to failure of vital functions at a body temperature that is far above that which causes an arrest of cellular metabolism. Necrosis during local freezing, however, implies severe cellular injury. During exposure to cold great circulatory changes take place to protect the body as a whole, leading to contraction and gradual centralization of the circulation. The author explains the development of various cold injuries of the skin on the basis of a reaction of the vessels, and he concludes that there are no real cold lesions, but that all cold lesions are caused by improper rewarming. Not even freezing of tissues produces cellular damage. The critical oxygen deficiency, which in the last analysis is responsible for the tissue changes including necrosis, does not develop during exposure to cold, but during the rewarming process. He therefore demands that during early treatment the local tissue metabolism of the frozen part be kept fixed by keeping the frozen part at a temperature between 6 and 7 C (42 to 44 F). Warming of the frozen part without relaxation of the arterial spasm and without restoration of the capillary circulation at the demarcation zone, that is, without adequate oxygenation, produces, at temperatures above 6 to 8 C (42 to 46 F), that degenerative metabolism that causes the lesions usually ascribed to cold exposure. However, while the frozen peripheral parts are kept cool, warming must be started from the center of the organism, which the author accomplished by administering a fever-producing preparation of killed nonpathogenic coli bacilli. Vasodilating drugs proved inadequate to release the arterial spasm, and it is felt that interventions on the sympathetic nervous system should be reserved for late cases. Since the development of the artificial fever induced by the aforementioned preparation requires from four to six hours, heating from the center during this interval can be promoted by hot drinks, infusions, and clysters. Moderate amounts of alcohol may also promote capillarization. Administration of oxygen will aid the restoration of the tissue metabolism. The author disagrees with the investigators who demand rapid rewarming of a frozen part, pointing out that those who advocate this gained their experiences on laboratory animals that had been subjected to rapid freezing, a process totally different from that which prevails in the development of cold lesions in human subjects.

77:353-400 (No. 9) 1952. Partial Index

*Paralysis of Recurrent Nerve Following Strumectomy: Late Effects Ascertained by Follow-Up Studies. E. Beck.—p. 353.
Indications for Local Use of Sulfonamide in Surgery. H. Bremer and C. H. Löwen.—p. 362.
Metastatic Suppuration in Spinal Peridural Space. H. J. Dammermann. —p. 367.
Simultaneous Occurrence of Two Primary Carcinomas: Three Clinical Cases. H. Bofinger.—p. 369.
Cicatricial Carcinoma. C. Ortloph.—p. 372.
Clinical and Pathological Aspects of Synovioma of Joints. W. Hage. —p. 376.

Follow-Up Studies on Paralysis of Recurrent Nerve Following Thyroidectomy.—In 300 cases in which thyroidectomy was done, 12 patients had unilateral paralysis of the recurrent nerve following the operation. These patients were reexamined two years after the operation. Two patients had neither hoarseness nor dyspnea even with loud speaking or singing; hoarseness had subsided in one seven weeks, in the other two months after the operation. The author admits that the disappearance of hoarseness as such does not prove the restoration of normal function, for it subsides also when the normal vocal cord compensates for the paretic one. However, in both of these patients laryngoscopy disclosed that the vocal cords were in normal position. In seven other patients the normal vocal cord had compensated for the paretic one. In two the final result was unsatisfactory, and the remaining patient could not be reexamined. Hoarseness had subsided during the period from four weeks to six months after the operation. The author believes no further improvement in postoperative paralysis of the recurrent nerve can be expected after six months. This does not apply to the late forms of paralysis, which may appear only after a number of months as the result of cicatrization or neuritis. The author discusses in greater detail the different positions of the paretic vocal cords, including abduction and adduction, and describes newer experiences with vagotomy in cases of paralysis of the vocal cords in the adduction position (posticus paresis).

tion of the Army Medical Service. There is an interesting chapter on military preventive medicine and much new material on the medical aspects of atomic, biologic, and chemical warfare. Every reader of this section can obtain a thumbnail sketch of how the complex organization of the service developed and how many things have been added in order to keep in step with the great strides that modern medicine has made. The new special agents that have capabilities of widespread usage in future wars are meant to produce mass casualties. This means the development of special means of mass evacuation and treatment.

Part 3 covers medical tactics in administration and has to do with services in active theaters of operations or in communication zone installations. A considerable amount of space is devoted to medical military administration. This part contains detailed information about the technical employment of medical units in support of combat operations. The chapter on training of personnel and medical units is especially instructive. Here are described many things that a medical officer should know before he starts to operate any training program, no matter how simple.

Throughout the book there are many photographs, sketches, and diagrams. The diagrams are especially valuable in orienting the reader to the text. Any officer or enlisted man connected with the defense forces could utilize this book as a ready reference to almost everything that he comes in contact with that is new to him and different from that with which he is familiar in civilian life. A young medical officer by reading the text will readily learn terms and procedures that he will hear many times during his service with the colors.

This new edition is an improvement on former editions in both scope and content. It is printed on thinner paper, so that the book is not too bulky. In the foreword, the Surgeon General of the Army announces that, although this book is in no sense official, he considers it a determined effort to present in a condensed form the latest and most authentic information that could be drawn from official documents. It should serve its users as a convenient reference as well as a source of inspiration and guidance.

Textbook of Refraction. By Edwin Forbes Tait, M.D., Ph.D., Associate Professor of Ophthalmology, Temple University School of Medicine, Philadelphia. Cloth. $8. Pp. 418, with 93 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1951.

The author of this work has taught refraction to undergraduate and graduate students for several years and has tested in the classroom and in the clinic the methods of refraction and measurements of ocular motility that have been promulgated by advocates of systems of investigation of ocular disorders. The physiological background of neuromuscular abnormalities has received unusual attention, for an understanding of the ocular musculature is paramount in the explanation of disturbances of ocular motility and their relation to comfortable vision. All terms are defined so clearly that the students are saved the confusion so common in treatises based on the mathematical treatment of clinical refraction. It is assumed that the student has a working knowledge of ophthalmic optics. Abundant references are added to each chapter, so that there is no needless repetition of mathematical formulas.

In a somewhat unorthodox arrangement, the 38 chapters cover the field from consideration of illumination, faulty ocular structure, and faulty neuromuscular coordination as causes of visual disturbance through the types of refractive error usually found on clinical examination, reading difficulties, alexia, dyslexia, and amblyopia. Chapters on methods of refraction comprise a good portion of the book. Because of minor variations in methods that are, in principle, similar, the usually employed methods of refraction are fringed on both ends by rule of thumb practices that have been picked up in office practice. The true basis for these methods as well as a definition of their application as viewed by the author is a refreshing novelty in a book on a subject so scientifically exacting as refraction.

The book is well written and should be read by all refractionists who wish to understand the fundamental principles of the practice. It will be particularly helpful to graduates and practitioners as a review of physiology.

Urological Pathology. Volumes I and II. By Peter A. Herbut, M.D., Professor of Pathology, Jefferson Medical College and Director of Clinical Laboratories, Jefferson Medical College Hospital, Philadelphia. Cloth. $24 per set. Pp. 693; 695-1222, with 527 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1952.

This work, the author claims in his preface, is intended for a variety of readers, from the undergraduate student to the urologist. It is the attempt to write a book with such general appeal that produces many of the shortcomings of these two volumes. The contents are confined to disorders generally included in the specialty of urology. After a review of the embryology, anatomy, and physiology, the disease processes are treated on a regional basis.

This approach to pathology will certainly help the surgeon in his search for the disease of a lesion in a removed organ. But in the urologic system, disease frequently affects directly or indirectly the entire genitourinary system (e. g., tuberculosis), and it is often more helpful to discuss a pathological process as it occurs in the entire length of the urinary tract. In these volumes, to study the problem of tuberculosis the student would have to use six references, with the inevitable risk of failure to appreciate that the disease is essentially a process that may manifest itself in one or more of several organs. The pathological descriptions are, for the most part, complete, and good bibliographies provide the reader with references for more detailed study. The subject of congenital deformities calls for fuller description, as they are being recognized with increasing frequency in pediatric urology. In the discussion of hypertrophy of the bladder in the child, no mention is made of urethral valves as a mechanical cause for this condition, and it is necessary to turn to another section of the book to find an account of this important cause of urinary obstruction in childhood.

The author reasonably claims that the addition of sections on treatment helps to bring to life a dead subject, but the inclusion of clinical data seems redundant in a book claiming by its title to be a textbook of pathology. Moreover, the sections on diagnosis and treatment are necessarily brief and sometimes inaccurate. It is stated that the passage of air and feces in the urine is pathognomonic of urethral fistula, whereas these symptoms are far more diagnostic of a vesicorectal fistula.

Illustrations are plentiful but not always helpful in demonstrating the essential features of the lesion (e. g., hypospadias and exstrophy of the bladder). Excellent though they may have been in the past, the reproduced engravings from other sources such as "Gray's Anatomy" do not reach the high standards demanded by modern textbook illustration. With the faults mentioned above, it is difficult to recommend this work as a textbook for the student, but it should find a place as a useful book of reference on the urologist's bookshelf.

Das vegetativ-endokrine Syndrom der Frau. Von Prof. Dr. med. Friedrich Curtius, Chefarzt der med. Klinik des Krankenhauses Ost Lübeck, und Dr. med. Karl-Heinz Krüger, Oberarzt der inn. Abt. des allg. Krankenhauses Hagen i. W. Boards. 22 marks. Pp. 120, with 33 illustrations. Urban & Schwarzenberg, Thierschstrasse 11, München 22, 1952.

The authors apply the term vegetative-endocrine syndrome to a triad of symptoms, namely, vasolability plus obstipation plus ovarian insufficiency. The book contains eight chapters, which cover the following subjects: statistical basis for the vegetative-endocrine system in women, pathophysiology, the climacterium, metabolism and the vegetative nervous system, the limitations of the syndrome from other constitutional crises, and etiology, pathogenesis, and treatment. In only 12% of the authors' patients did the symptoms first arise in the climacterium. Many women who have this syndrome are mistakenly treated for cardiac disease or hyperthyroidism.

The treatment of the vegetative-endocrine syndrome is many-sided and includes gymnastics, massage with manipulation of the abdomen to overcome the obstipation, hydrotherapy, hypnosis in some cases, psychotherapy, the use of hormones, and reduction of weight in obese women. The use of coffee, tobacco, and salt must be eliminated. The cause of this syndrome according to the authors is a disturbance in the diencephalus-hypophyseal relationship. At the end of the book, there is an extensive bibliography. It is difficult to evaluate this book if one is not convinced that there is such a specific syndrome as the authors have written about.

Psychiatry in General Practice. By C. A. H. Watts, M.D., D.Obst. R.C.O.G., and B. M. Watts, M.B., B.S. With foreword by J. D. Wyndham Pearce, M.D., F.R.C.P.E., D.P.M., Assistant Physician to Department of Psychiatry, St. Mary's Hospital, London. Cloth. 12s.6d. Pp. 228. J. & A. Churchill, Ltd., 104 Gloucester Pl., Portman Sq., London W.1, 1952.

To quote its foreword, this little book was "written . . . by general practitioners for general practitioners," and, it may be stated forthwith, the volume serves its purpose admirably. A specialist may, of course, cavil at the oversanguine naïveté expressed in statements such as (page 5) "The average time spent on [the cure of] a neurotic is about three hours"; (page 12) "50-5 per cent of suitable psychiatric cases can be expected to recover completely and cease to be (sic) a burden on the general practitioner"; or the table on page 10 that neatly lists the "causes of anxiety" as follows: "frustration, 45 per cent, insecurity 35 per cent, sexual problems 16 per cent, guilt feelings, 4 per cent." Even more misleading is the assertion (page 162) that "Many hysterics have a low I.Q. and their inferior intelligence renders them inadequate when the stress and strain of life becomes too great," or (page 167) the classification of schizophrenia among "the rarer forms of psychiatric illness." And yet such slips from grace do not change the fact that the book is simply and engagingly written and that it packs into a small space a gratifying amount of good sense and useful advice to the general practitioner on how to detect, diagnose, and treat the incipient and reversible disorders of somatic function and general behavior that form so large a proportion of his daily responsibilities. The book is too brief and too sparsely documented to be used as a text or standard reference work, and some of its passages are applicable only to British panel practice. Nevertheless, it reflects such clarity of thought and breadth of experience that it will appeal to students and physicians everywhere.

Cold Injury: Transactions of the First Conference June 4-5, 1951, New York, New York. Edited by M. Irené Ferrer. Sponsored by Josiah Macy, Jr. Foundation. Cloth. $3.25. Pp. 248, with 39 illustrations. The Foundation, 565 Park Ave., New York 21, 1952.

In this book, the explanation and treatment of the changes that occur in the body when all or part of it is exposed to cold are discussed. Each of the five sections consists of a coherent presentation by one investigator followed by a much less coherent general discussion by other participants in the conference. The discussion is painful reading at times, because it shows not only how labored are the gropings of the scientific mind but also how imperfect is the communication between two such minds. Words are badly misused ("differential" for "difference," page 162); metabolism is referred to as "basal" when it is not (pages 228 and 229); unnecessary abbreviations ("Tm," page 150) are used in the text and reappear, still unexplained, in the index (page 247); and reckless statements ("I don't believe all this nonsense about these nervous patients," page 143) abound. While this makes for misunderstandings, it also constitutes a challenge to participants in future conferences.

Of the five divisions, two are concerned with animal experiments and the other three deal with homeokinesis, hypothermia, and acclimatization. For the medical reader, the most important idea in the book is expressed by Siple (page 88): The key to rewarming is sequence, not rate, and the circulation must be ready to enter each successive area as soon as it is thawed. It is hoped that the next of these annual conferences will bring out more connected thinking on this crucial point.

Handbook of Chest Surgery for Nurses. By J. Leigh Collis, M.D., B.Sc., F.R.C.S., Assistant Surgeon, United Birmingham Hospitals, Birmingham, England. In collaboration with L. E. Mabbit, S.R.N. Third edition, revised by J. Leigh Collis. Cloth. $3. Pp. 188, with 131 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; Baillière, Tindall & Cox, 7-8 Henrietta St., Covent Garden, London, W.C.2, 1951.

This small handbook has been designed as a textbook for nurses working in wards in which diseases of the chest are treated or in hospitals devoted to surgery of the chest. The simple and concise presentation of thoracic anatomy and physiology is to be commended. Surgery of the chest is described, and such details as armamentarium, positioning of patient, and water-seal drainage have not been overlooked. Particular emphasis has been placed on radiology and postoperative care. Five years have elapsed since the publication of the second edition of this handbook, and the authors are to be complimented for making those alterations and additions that have become necessary in the intervening period of time. The subject of chemotherapy has not been neglected, and its importance to pulmonary tuberculosis has been stressed. Although a book of this type does not permit lengthy discussions, it would have been well to include a few thoughts concerning esophageal diverticulum. This book can be recommended to nurses who work in chest surgery.

A Sex Guide to Happy Marriage. By Edward F. Griffith. Introduction by Robert Latou Dickinson, M.D. Cloth. $3. Pp. 352, with 19 illustrations. Emerson Books, Inc., 251 W. 19th St., New York 11, 1952.

This book, originally written in 1935, has gone into 25 editions, which have had a wide sale in England and in the Commonwealth countries. This American edition has been specially prepared and brought up-to-date. Robert Latou Dickinson, who was a pioneer in sex education in the United States, has written an introduction. The book provides a liberal education for the lay person concerning the role that sex plays in an enlightened society. The door of sex behavior has been thrown wide open, and ignorance and fears have been completely dispelled. Scientific information properly presented to adults must result in wholesome rewards.

The author describes in detail and by well-chosen illustrations the anatomy and the function of the reproductive organs. He discusses the problems of the single man and woman, their premarital relations, and normal and desirable sex conduct after marriage. He discusses the facts concerning the spacing of children and the methods available for the control of reproduction. Some sex problems of the adolescent boy are discussed. Two of the chapters are devoted to the diagnosis and treatment of sterility. The appendix lists the various marriage counseling services, the family counseling services, and the planned parenthood clinics available in the United States. A bibliography contains the names of the most informative books for lay education in this special field. This carefully written, informative, and interesting book can be recommended to physicians as a text in the increasing number of college courses that prepare young persons for marriage and for intelligent young adults who should be better informed about sex and its implications.

Oral Medicine: Diagnosis and Treatment. By Lester W. Burket, A.B., D.D.S., M.D., Professor of Oral Medicine and Dean, School of Dentistry, University of Pennsylvania, Philadelphia. With chapter on Oral Cancer by S. Gordon Castigliano, B.A., B.S., M.D., Chief, Department of Head and Neck Tumors, American Oncologic Hospital, Philadelphia. Second edition. Cloth. $14. Pp. 575, with 372 illustrations. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2; 2083 Guy St., Montreal, 1952.

The second edition of this textbook on oral medicine includes a complete rewriting of many chapters and an extensive revision of others. The material dealing with gingivitis, herpes, lichen planus, leukoplakia, and diseases of the tongue has been greatly expanded. A new section on oral cancer is of particular interest to the general practitioner who often has thrust on him the initial responsibility for early recognition of oral cancer regardless of who may subsequently treat the disease. The bibliography has been revised extensively and a number of new illustrations added. For the otolaryngologist, dermatologist, internist, general practitioner, and dentist, in fact, for any physician who examines the mouth, this book is invaluable.

Ear, Nose and Throat Diseases for the General Practitioner. By William McKenzie, M.B., B.Chir., F.R.C.S., Surgeon, Royal National Throat Nose and Ear Hospital, London. Cloth. $2. Pp. 136, with 9 illustrations. [Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2]; E. & S. Livingstone, Ltd., 16 and 17 Teviot Pl., Edinburgh 1, 1952.

This small book is a superficial presentation of the commoner ear, nose, and throat diseases encountered in clinical practice. Notwithstanding an easy, conversational style and some down-to-earth comments on the art of practicing medicine, it is doubtful whether a slight coverage of the many topics discussed is suited to the day-by-day requirements of the contemporary general practitioner in need of more detailed information.

QUERIES AND MINOR NOTES

BEER AND PENTOBARBITAL (NEMBUTAL®) AND A FRACTURED SKULL

To the Editor:—*A man, 33 years old, while working, was struck on the head with a small piece of falling metal, causing a laceration that was closed with two stitches. The attending physician gave him six 1.5 grain (0.10 gm.) capsules of pentobarbital (nembutal®). He was injured at 2:00 p. m. and returned to work. At 4:00 or 4:30 p. m., he took one capsule, and he left at 5:30 to drive a truck about 40 miles from the plant. On the way, he stopped and drank one bottle of beer. Then, as he drove on, the right side of the car swerved and hit the railing of a bridge, breaking in two a 2 by 6 oak beam. His car hurtled into the creek, and the patient died of a fractured skull shortly after entering the hospital. Would the alcohol in the beer combined with the 0.10 gm. of pentobarbital cause him to be so inebriated that he would become reckless of his life?*

George T. Peel, M.D., Anderson, S. C.

Answer.—One 12 oz. (360 cc.) bottle of 3.2 beer contains ½ oz. (15 cc.) of absolute alcohol. If all the alcohol were absorbed and none oxidized or eliminated, the alcohol content of the blood would be about 0.02%. This amount of alcohol would be insufficient to account for the man's accident. The barbiturate alone could have had sufficient sedative effect to have contributed to the accident. It is also a remote possibility that the man had an idiosyncrasy to the barbiturate, so that a brief state of excitement might have preceded the sedative action. It is of course obvious that no person should drive a car when taking therapeutic doses of sedative drugs. The evidence that this man drank one bottle of beer is probably only hearsay, and the amount of alcohol in the body could have been determined only by a chemical test. It is well known that there is usually a discrepancy between the amount of drinking that is admitted and the amount of alcohol that appears in the blood. In cases of death by violence a postmortem examination should include an examination of the blood and/or urine and spinal fluid for alcohol.

VITAMINS AND IMPAIRED HEARING

To the Editor:—*Is there any value in treating otosclerosis with vitamin A injections?* *M.D., Alabama.*

Answer.—Unfortunately, vitamins have not proved of value in the treatment of any type of hearing impairment, including otosclerosis. There have been a few preliminary promising reports in the literature, but subsequent testing on a well controlled series of cases failed to show favorable results.

PERFORATION OF NASAL SEPTUM

To the Editor:—*What can be done to stop the whistling sound caused by a small perforation of the nasal septum? Will enlarging the perforation stop the noise? My patient is a singer and is distressed by this condition, which followed many years after a nasal cosmetic operation, probably including repair of a deviated septum.* *M.D., New York.*

Answer.—A whistling sound caused by a small perforation of the nasal septum can be corrected either by epithelization or by surgical means. In the former instance, the perforation is enlarged, and the raw edges are cauterized with a silver nitrate stick or with a fine cotton applicator dipped into a 50% solution of trichloracetic acid. A septal perforation can also be repaired surgically by downward shifting of a bipedicled flap on the mucous membrane of one side. The success of this procedu depends largely on the size of the perforation and the amou of scarring present.

VISCOSITY OF SEMEN

To the Editor:—*What is the cause of the increased viscosity seen in semen with sperm counts that are below standard f fertilization? Is there an etiological factor in these specin that prevents liquefaction of the semen? Some of these patients have an associated prostatovesiculitis that could caus a purulent secretion and, therefore, poor liquefaction; but, there are others who show no evidence of local prostatovesicular disease and yet have semen that remains unliquefied for as long as 24 hours. Is there any effective parenteral treatment?* *Murray Russell, M.D., Beverly Hills, Calif.*

Answer.—Increased viscosity of semen occurs oftener in the presence of oligospermia, but azoospermatic specimens may be viscous as well as those with more than 100 million spermatozoa per cubic centimeter. There is no recognized specific etiological factor that prevents liquefaction of the semen. Hotchkiss cites an instance of decreased viscosity after weekly prostatic and seminal vesicle massage; however, specimens may be viscous in the absence of infection. Hotchkiss also states that neither short courses of testosterone propionate nor injections of chorionic gonadotropin were helpful. There is no known chemical that can be given parenterally with resultant benefit. It is generally agreed that hyaluronidase is not present in the absence of spermatozoa, yet such specimens may or may not be viscous. It would seem unlikely that subcutaneous injection of hyaluronidase would be of any help.

DRY ICE IN GOLF BALLS

To the Editor:—*A woman works in a golf ball factory, where she handles rubber immediately after it has been treated with dry ice. Will her health be impaired as a result of handling this frozen rubber?*

W. R. Troutwine, M.D., Crown Point, Ind.

Answer.—In some golf ball factories, rubber strands are wound about a pellet of dry ice, which after evaporation leaves a desired hollow space at the core of the ball. All resulting damage to workers is a consequence of cold, since the quantity of carbon dioxide is usually insufficient to overstimulate respiration or to cause oxygen deficiency by displacement. From direct contact with the ice or cold rubber, severe tissue freezing may readily arise, with ensuing vesication, necrosis, and gangrene. Apart from freezing, chronic persistent erythema and pain (chilblain) may arise. Underlying this condition is a vague peripheral vasoneuropathy. These effects may be readily understood when it is realized that the temperature of dry ice is about -109 F (-78.3 C).

REMOVAL OF ACNE SCARS

To the Editor:—*In* The Journal *April 19, 1952 (page 1458) is a query on the use of carbon dioxide slush in the treatm of postacne scars. The answer correctly states that the abov treatment is of little value but fails to inform the question that there are available at present two methods that impro postacne scars considerably. They are both abrasive method the purpose of which is to level down the skin to the bu of the scars. This is achieved by either sandpapering or, pref erably, using the method recently introduced by Kurtin, which the skin that has been frozen with ethyl chloride planed down with a revolving metal brush. I have used latter method in many cases with excellent results.*

Samuel Monash, M.D.
2 E. 54th St., New York 22.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.